



PHD

**The Dynamics of Inter-Organisational Trust Violation and Repair
An Exploratory Analysis in the Taiwanese Electronics Industry**

Wu, Hung-Jui

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**The Dynamics of Inter-Organisational Trust Violation and Repair:
An Exploratory Analysis in the Taiwanese Electronics Industry**

Hung-Jui Wu

**A thesis submitted for the degree of
Doctor of Philosophy
University of Bath
Department of Management
May 2019**

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Dedication

*This thesis is dedicated to my parents, Ming-Yi Wu and Hsuan-Pi Huang, and my
brother, Hung-Chun Wu*

ABSTRACT

For this research, the dynamics of how inter-organisational trust is violated and repaired is investigated, thus contributing to the burgeoning field of inter-organisational trust violation and repair literature. Four identified theoretical and empirical gaps identified from the extant literature are addressed: i) single point in time, ii) single dimension of trust, iii) single outcome of trust repair, and iv) single party focus, by drawing on longitudinal, dyadic, comparative multiple case study data.

From a process perspective, this study involves collecting, analysing, and presenting the data with respect to the level of competence and goodwill trust across the pre-transgression, trust violation, trust repair, and post-repair stages. Over a two-year data collection period, 59 semi-structured, face-to-face interviews with respondents across organisational hierarchies (e.g. GMs, VPs, PMs, QA teams, RD teams, and procurement managers) and from both buyers and suppliers in the Taiwanese electronics industry were conducted. Based on the four case studies that consist of rich narratives and through representative graphical illustrations, the temporal dynamics of competence and goodwill trust over time are explored.

The findings reveal that the process of trust violation and repair entails multiple mini-episodic interactions between the buyer and the supplier that constantly shape the level of trust dynamically. In the trust violation stage, trust violation consists of multiple transgressions. If these transgressions are met with ineffective reparative attempts (i.e. recalibration practices), then this generally, first, violates competence trust and then, gradually spills over into goodwill trust violation. In the trust repair stage, goodwill trust is repaired earlier than competence trust, which appears to be opposite to the order of their being built. Through his study, critical factors that facilitate and hinder trust violation and repair stages, respectively, are identified, thereby deepening the understanding of how differential outcomes of trust repair are achieved.

The findings not only address the gaps identified in the theory, for they also have significant managerial implications. Accordingly, a set of recommended strategies is put forward for managers to facilitate mitigation of the severity of trust violation and to repair the violated trust effectively. This could reduce significant operational and financial losses associated with trust violation and repair for the buyer-supplier dyad.

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LIST OF ABBREVIATIONS

Abbreviation	Description
PM	Project manager
FAE	Field application engineer
R&D	Research and development
QA	Quality assurance
QC	Quality control
ODM	Original equipment manufacturer
OEM	Original design manufacturer
BOM	Bill of materials
MUS	Mock-up sample
MP	Mass production
RMA	Return material authorisation
PCB	Printed circuit board
IC	Integrated circuit
IQC	Incoming quality control
IPQC	In process quality control
FQC	Final quality control
OQC	Outgoing quality control
RFQ	Request for quotation
NRE	Non-recurring engineering
CAPA	Corrective and preventive actions
SOP	Standard operating procedure
ISO	International standard organisation
DOA	Dead on arrival
AVL	Approved vendor list
CPK	Capability process index
e.g.	Exempli Gratia (<i>Latin</i>); for example
etc.	Et cetera (<i>Latin</i>); and the rest, and so forth
i.e.	Id est (<i>Latin</i>); that is
CEO	Chief executive officer
VP	Vice president
EVP	Executive vice president
GM	General manager
RoHS	Restriction of hazardous substances
CAR	Correction action request

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CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND TO THE RESEARCH

Inter-organisational trust is a critical component within buyer-supplier relationships (Brinkhoff et al., 2015; Connelly et al., 2018; Johnston et al., 2004; Zaheer et al., 1998). It serves as an organising principle that creates desired and necessary conditions for inter-organisational exchanges that promote high performance (McEvily et al., 2003). The extant literature has shown that inter-organisational trust brings about multiple benefits to inter-organisational relationships, including improved efficiency and productivity (Gulati and Nickerson, 2008; Panayides and Lun, 2009), reduced transaction and search costs (Luo, 2002; Squire et al., 2009), higher relationship-specific investment (Hoffmann et al., 2010), and improved financial performance (Corsten and Feld, 2005; Fink and Kessler, 2010).

Despite acknowledgement of these benefits, trust is sometimes violated by supplier induced disruptions (Lumineau et al., 2015), such as under-capacity, quality issues (e.g. unauthorised adjustments to the product specifications and defective products), significant increases in price, delays in product delivery, or inappropriate cancellation of production (SEC annual report, 2017). For example, Prevent Group halted product deliveries to Volkswagen in 2015 by demanding a 1000% price increase, which caused \$120 million loss to the buyer (Automotive Logistics, 2018). Volkswagen's trust in Prevent Group was severely violated as its spokesperson noted: *"at all times, [Volkswagen maintains] a reliable and trustworthy relationship with its suppliers [...] in this specific case, we had to take the necessary steps"* (Deutsch Welle, 2018).

The omnipresence of supplier-induced disruptions poses a significant threat to inter-organisational trust violations (Wang et al., 2014). Regarding which, 47% of supplier collaborations failed with the major reason being attributable to violated trust (Procurement Leaders, 2017). As a result, trust violations undermine the buyer's positive expectations of the supplier's behaviour and in turn, reduce the buyer's willingness to rely on the supplier (e.g. decreased purchase volume). They can also result in a loss of financial and human resources as well as reputation on both sides of the dyad, even leading to relationship dissolution in the most severe situations (Hibbard et al., 2001; Holmlund and Hobbs, 2009).

Of course, violated trust can also be repaired. The nature of some constrained supply markets means that alternatives are not always available to buyers and therefore, termination is not an option or would incur significant losses, leaving repair the only viable solution (Caldwell and Howard, 2014; Tahtinen and Vaaland, 2006). Alternatively, one or both parties might wish to sustain the benefits associated with the trusting relationship and thus seek active repair (cf. Janowicz-Panjaitan and Krishnan, 2009). In light of this, the importance of inter-organisational trust violation and repair has received increasing attention from academics and practitioners (Kramer and Lewicki, 2010).

Despite growing recognition that trust violation and repair between buyers is an important managerial challenge, there are at least four significant gaps in the extant scholarship. First, the majority of studies are constrained to a static, cross-sectional analysis. This means, that a single transgression is assumed to trigger trust violation automatically and immediately to a point where trust repair may be required. Similarly, reparative responses are assumed to affect the outcome of a repair immediately and simultaneously. Largely this is attributable to the primacy given to survey-based and experimental designs (e.g. Wang and Huff, 2007; Wang et al., 2014; Yu et al., 2017), both of which involve adopting a cross-sectional research approach. However, trust is, rather, a dynamic state indicating “*an ongoing process that must be initiated, maintained, sometimes restored and continuously authenticated*” (Flores and Solomon, 1998, p. 206) that is based on constant updates of information and experience during inter-organisational interactions (Luo, 2004). Kramer and Lewicki (2010, p. 268) add that “*we will learn little about real trust repair (and the effectiveness of various strategies and tactics) until we can more accurately calibrate trust violation dynamics over time*”.

Second, in prior trust violation and repair studies trust has been examined as an aggregated construct, leaving more granular effects from different trust dimensions – competence and goodwill - understudied (one notable exception is the study by Malhotra and Lumineau, 2011). In particular, the impact of transgressions and reparative responses on shaping both dimensions of trust still remain unclear (Connelly et al., 2018). It is important not only because competence and goodwill trust are conceptually distinctive constructs that may be differentially violated and repaired (Kim et al., 2004), but also, because the two trust dimensions lead to different outcomes (e.g. economic and relational outcomes) (Connelly et al., 2018).

Third, the extant literature has provided a limited understanding of the relative effectiveness of responses when compared with each other. It often overlooks the role of the level of prior trust (before the transgression) plays and anchors in the trust violation process. Specifically, the effectiveness of responses in comparison to the prior trust still remains largely under-researched despite scholarly contentions over potential restoration as well as the upward, and downward recalibration of trust (Kramer and Lewicki, 2010). It is important to understand the nuance of how various reparative responses adopted at different times, by different actors, and with different intensity, may result in different post-repair outcomes.

Finally, past studies have also largely assumed that trust violation and repair is predominantly driven by the trustee's behaviour (in this case the supplier) (Kim et al., 2009), which is unilaterally evaluated by the trustor (the buyer) (e.g. Wang et al., 2014). However, the buyer and the supplier in fact "*consider others' reactions when determining how to repair or respond, trust violation and repair processes are not independent, dyadic events*" (Yu et al., 2017, p. 233). This is critical not only because it provides a more accurate understanding of the phenomena via evidence constructed by perceptions of both parties, but also because it reflects the reality that trust violation and repair are characterised as a process of dynamic negotiation between the trustor and the trustee (Kim et al., 2009).

Given the gaps identified above, the overarching aim of this thesis is to explore the dynamics of the trust violation and repair process in inter-organisational relationships. Two distinct, yet interrelated, research questions are constructed to guide this process, as follows.

RQ1: What are the dynamics of competence and goodwill trust in the trust violation stage?

To address this research question, the emergence, the development, and consequences of a transgression(s) and how these violate competence and goodwill trust over time until the relationship reaches deadlock are investigated. Moreover, RQ1 requires identifying critical factors that facilitate or hinder the trust violation process.

RQ2. What are the dynamics of competence and goodwill trust in the trust repair stage?

In addressing this research question, the transition from trust violation to repair stages is examined. There is also an investigation of the effect of reparative responses enacted by the

buyer and the supplier on repairing competence and goodwill trust over time. Similar to RQ1, this research question also requires uncovering critical factors that facilitate or hinder the trust repair process. Importantly, the study reflects on the responses in light of the previous trust violation, thereby connecting the two stages of the process that are largely unconnected in the extant literature.

1.2 OVERVIEW OF THE CONTRIBUTION

This thesis contributes to both theory and practice. With respect to its theoretical contributions, first, a processual view is taken that reveals differential rates of violation and repair with respect to competence and goodwill trust. Moreover, it uncovers the timing and sensitivity of competence and goodwill trust as well as the interaction of both dimensions over the trust violation and repair stages (Malhotra and Lumineau, 2011). Second, this research identifies responses and factors that affect competence and goodwill trust in the trust violation and repair stages. It contributes to the limited prior understanding of the initiation, acceleration, and deceleration of trust violation and repair. Last, this study contributes to the extant literature by identifying negative and positive turning points that facilitate the understanding of transitions of the level of trust, whilst also revealing potential thresholds that accelerate the trust violation and repair (Dirks et al., 2009).

Empirically, this study captures four temporal stages including: pre-transgression, trust violation, trust repair, and post-repair (Dirks et al., 2009). This facilitates an understanding of how the characteristics of previous stages actually shape or determine subsequent outcomes. This research contributes to the literature by overcoming the assumed linearity and one-sided focus by capturing actions and reactions enacted by both the buyer and the supplier over time (Stevens et al., 2015). Whilst a large number of prior studies have been grounded in either conceptual or survey/experimental settings, for this work the dyadic multiple case study method based on longitudinal data is adopted to capture the processes of trust violation and repair. In addition, graphical illustrations are provided to represent and compare the data across different cases.

With respect to practical contributions, as inter-organisational trust is a critical source of firms' competitive advantage, this study provides a set of recommended strategies to contain the trust violation and quickly repair the violated trust. These could help organisations to

reduce operational and financial resources spent in the process and to restore normal operations in a timely manner.

1.3 OVERVIEW OF THE METHODOLOGY

An under-represented longitudinal and dyadic research methodology is adopted for investigating trust violation and repair processes from both the buyer and supplier sides over time. More specifically, in-depth, multiple case studies based on a theoretical sampling of differential outcomes of trust repair (restoration, down- or up-ward recalibration) are utilised. Overall, the data collection yielded 59 in-depth semi-structured interviews across operating to corporate level personnel in the Taiwanese electronics industry. Different types of secondary data (e.g. industry reports, company reports, and technical reports) were also gathered that complemented the rich primary dataset. Primary and secondary datasets were collected by following four buyer-supplier dyads over time, thus offering a unique opportunity to investigate the dynamic process of trust violation and repair (Suddaby, 2006).

The selection of the Taiwanese electronics industry is particularly pertinent for two reasons. First, the extant literature suggests that buyers in the high-tech industry tend to place higher importance on trust towards suppliers, which manifests itself in the sense of affiliation and identification (Ruyter et al., 2001). Second, Taiwanese electronics manufacturers maintain their cost competitiveness via close cooperation with upstream and downstream firms (Hwang and Choung, 2014). These trusting relationships between OEMs, suppliers and other partners in the supply chain (e.g. distributors and contract manufacturers) are critical to success in competitive environments.

1.4 OUTLINE OF THESIS

This thesis comprises seven chapters, the first being the present one, which has introduced the background to the research, provided the research questions under investigation, given an overview of contribution, and provided an overview of the methodology. The remainder of the thesis is structured as follows.

Chapter two: literature review

This chapter synthesises the relevant literature in order to define the focus of this study. Specifically, there is a review of the extant literature on inter-organisational trust, including its definition, emergence, and consequences, followed by a description of the trust violation and repair process. Then, the definition and outcomes of trust violation, as well as factors affecting it across interpersonal and inter-organisational trust violation studies, are covered. The research questions are derived from specific gaps identified in the review.

Chapter three: methodology

This chapter outlines the research philosophy and methodology that guide the study. The research type, strategy, and design based on their appropriateness for addressing the research questions are explained and justified. Following this, the research credibility (i.e. validity and reliability) measures are described and the data analysis steps delineated.

Chapter four: within-case analysis

This chapter presents the findings of the empirical investigation across the four cases. Each case begins with a brief background of the companies (the buyer and the supplier) and a graphical illustration of the overall dynamics of trust violation and repair. Then, this is broken down into six distinctive phases: pre-transgression stage, negative turning point, trust violation stage, positive turning point, trust repair stage, and post-repair stage. Each stage contains detailed narratives supported by interview quotes from both the buyer and supplier sides.

Chapter five: cross-case analysis

This chapter consolidates the findings from the within-case analysis, identifying key insights and factors that allow for the research questions to be addressed. These insights and factors are examined in greater depth and validated across the four investigated cases to ascertain their impact on addressing the research questions.

Chapter six: discussion

This chapter reflects on the research findings by revisiting the research questions. In addition, the findings are compared and contrasted with the past literature in order to identify potential similarities and differences, which are reconciled with theoretical explanations.

Chapter seven: conclusion

This chapter discusses the theoretical and empirical contributions of the research as well as managerial implications. The limitations of this study are presented, followed by suggestions for future research.

CHAPTER SUMMARY

This chapter has provided the background to this thesis by introducing the research context, research aim and objectives, the research context, the initial conceptual framework and by [providing an outline of the thesis structure. The following chapter examines the research concepts incorporated into the initial conceptual framework.

CHAPTER TWO: LITERATURE REVIEW

INTRODUCTION TO THE CHAPTER

This chapter reviews the background literature that supports the development of two research questions. Section 2.1 begins with the vulnerability of buyer-supplier relationships and reviews different streams of literature that examine the outcomes of and responses to supply chain disturbances. Section 2.2 presents the definition, dimensions, and consequences of inter-organisational trust, whilst section 2.3 reviews the overall process of trust repair. Sections 2.4 and 2.5 review trust violation studies at the interpersonal and inter-organisational levels, followed by section 2.6, a synopsis of cross-level fertilisation regarding trust violation. Sections 2.7 and 2.8 discuss trust repair research across the interpersonal and inter-organisational levels. Then, section 2.9 provides a cross-level synopsis on trust repair. Finally, section 2.10 integrates the extant literature and provides the two research questions.

2.1 THE VULNERABILITY OF BUYER-SUPPLIER RELATIONSHIPS

To accommodate increasingly intensified competition, shortened product lifecycle, and high inventory and logistics costs (Das, 2011; Ruyter et al., 2001), firms have shifted from arms-length transactional relationships to long-term collaborative ones with their strategic supply chain partners in order to utilise other firms' capabilities and resources (Kannan and Tan, 2006; Wisner et al., 2014).

Among various supply chain configurations (i.e. vertical, horizontal, and network collaboration), vertical collaboration between buyers and suppliers is the most common form and particularly focused upon in this thesis, because it is relatively difficult for firms to engage in direct collaboration outside one-tier upstream and downstream partners, providing limited resources and insufficient information (Autry and Golicic, 2010; Fawcett and Magnan, 2002; Kotabe et al., 2003). As a result, managing buyer-supplier relationships is a critical element to firms' supply chain management (Harland, 1996). Successful buyer-supplier relationship management leads to positive firm performance (e.g. cost and lead time reduction, as well as the access to product and process technology), which creates a competitive market advantage (Mentzer et al., 2000, Tan et al., 1999).

2.1.1. Supply chain disturbances

As a buyer-supplier relationship becomes more collaborative and long-term oriented, it is characterised by continuous information exchange, a mutual sharing of risks and rewards, significant interconnectedness, and mutual interdependence (Hendrick, 1995). Intensive resources are essential to maintain a high level of inter-organisational coordination for various activities (e.g. R&D, manufacturing, and distribution) (Dwyer et al., 1987). Given the highly integrated and complex nature of relationships, contractual governance alone is not adequate, because there are too many unforeseeable contingencies (Poppo and Zenger, 2002). In addition, contractual governance may not always be desirable for firms, because the presence of a certain level of flexibility is essential to maximise mutually beneficial outcomes (Harris et al., 1998). Hence, relational governance, trust in its various forms and relational norms, play important roles in regulating risks and uncertainties pertaining to buyer-supplier relationships and also allow for collaborative firms to benefit from them (Poppo et al., 2008). Without sufficient trust in place, firms tend to pursue their goals solely based on their self-interest and demonstrate a reluctance to depend on their collaborating partners (Sabath and Fontanella, 2002).

Firms have developed various supply chain management practices embedded in trust, such as just-in-time, single-sourcing, and early involvement of suppliers in the new product design phase (Lummus and Vokurka, 1999). These practices heighten the inherent interconnectedness and interdependences between buyers and suppliers. However, this also makes organisations more vulnerable to supply chain disturbances (Craighead et al., 2007). These can come from multiple sources that generally involve buyer and/or supplier induced transgressions (e.g. production delays and defective quality); natural disasters (e.g. tsunamis and earthquakes); and man-made ones (e.g. wars and terrorist attacks) (Hendricks and Singhal, 2005; Tang, 2006). Amongst these, buyer and/or supplier induced transgressions are the major source that causes supply chain disturbances (Waters, 2011). This thesis particularly is focused on supplier-induced transgressions, because they are more prevalent, well-documented, and easily detected (Reinmann et al., 2017).

2.1.2. Trust as the focal mechanism

There are two common focal domains where transgressions and potential recoverable actions have negative and positive effects respectively on buyer-supplier relationships, namely the

transactional and relational domains (Dirks et al., 2009; Hammervoll, 2011). The transactional domain refers to the extent to which transgressions disrupt the exchange of physical materials and products and cause monetary losses, while the relational domain refers to the extent to which transgressions reduce the level of confidence in the form of trust, commitment, and satisfaction towards the violator (Hammervoll, 2011). These domains dynamically change with events and (re)actions initiated by buyers and suppliers (Hibbard et al., 2001).

Generally, there are four streams of literature that examine how firms are affected by and how they deal with transgressions, namely supply chain disruption recovery, service failure recovery, conflict/dispute resolution, and trust repair. The aforementioned two domains serve as a useful differentiator across alternative mechanisms that have arisen from several streams of literature (*Table 2-1*).

		Transgression (negative)		Recoverable responses (positive)	
		Transactional	Relational	Transactional	Relational
Streams of literature	<i>Trust repair</i>	✓	✓	✓	✓
	<i>Conflict/dispute resolution</i>	✓	✓	✓	-
	<i>Supply chain disruption recovery</i>	✓	-	✓	-
	<i>Service failure recovery</i>	-	✓	-	✓

Table 2 - 1. The comparison of different streams of literature in relation to the transactional and relational domains

The supply chain disruption recovery literature primarily investigates the interruption and facilitation of the flow of physical products and information in on-going business exchanges, where activities from the transactional domain are emphasised (Macdonald and Corsi, 2013). Conversely, the service failure recovery literature largely focuses on the dynamics of expectations according to (dis)confirming events and (re)actions that result in

corresponding levels of (dis)satisfaction (Vaerenbergh and Orsingher, 2016). In this line of research, the relational domain (e.g. expectation, satisfaction, and fairness) is centred (Hess et al., 2003).

In terms of the conflict resolution literature, many studies view conflicts as a manifestation of trust violations, which lead to reduced commitment and performance, and deem the resolution of conflicts as being a set of measures that aims to settle operational and financial problems (Malhotra and Lumineau, 2011). While this stream of literature captures both the transactional and relational domains, it borrows extensively from trust violation and repair studies on its effects on the relational domain, which makes it less directly concerned with the focal domains (Lumineau et al., 2015). On the whole, the first three streams of research tend to capture immediate or short-term responses after transgressions, such as settlement and reconciliation (Tomlinson et al., 2004).

On the other hand, the trust violation and repair literature map the negative effect of transgressions and signal positive expectations on three aspects, namely cognition, emotion, and exchange, where the first two are concerned with the relational domain and the last is related to the transactional domain (Dirks et al., 2009; Wang et al., 2014). Trust repair goes beyond settlement and reconciliation (Li et al., 2013). It is an effortful endeavour that requires a longer timeframe to complete (Tomlinson et al., 2004). A more detailed review of trust repair literature will be presented later in this chapter.

Compared to other mechanisms, inter-organisational trust is the most all-encompassing one, because it directly captures both transactional and relational domains over the complete buyer-supplier relationship recovery after transgressions and also, has the most comprehensive theoretical foundation. Thus, this thesis is set to examine inter-organisational trust as the dependent variable. The following section introduces the conceptualisation of inter-organisational trust.

2.2 THE CONCEPTUALISATION OF INTER-ORGANISATIONAL TRUST

Inter-organisational trust is defined as “*the extent of trust placed in the partner organisation by the members of a focal organisation*” (Zaheer et al., 1998, p. 142). Whilst a firm cannot literally trust another firm, its members can form a collective trust orientation towards a collaborating one (ibid). Organisational members from a trusting firm (a trustor hereafter),

especially purchasing managers, key account managers and project managers, are boundary spanners who facilitate social and economic exchanges, translate the trustor's interests, and convey expectations towards a trusted firm (a trustee hereafter) (Perrone et al., 2003). These boundary spanners act as judges when making decisions about whether or not to trust as they transform their perceptions towards the trustee into recommended actions initiated by the trustor (Luo, 2008).

Inter-organisational trust, therefore, travels across different levels, from individual level trust gradually transcending to organisational level trust through the process of institutionalisation (Schilke and Cook, 2013; Zaheer et al., 1998). This transference process begins with intra-organisational trust developed by the trustor's boundary spanners towards the trustee (as an organisation) based on preliminary research and secondary data about its capabilities (*Figure 2-1*). Following that, the boundary spanners between the trustor and the trustee engage in more frequent interaction, establishing interpersonal trust through their intra- and extra-role behaviour (Kroegeer, 2012). That is, boundary spanners not only behave according to their prescribed organisational roles, for they also engage in extensive faceworks "*devised or improvised by the individual actor*" (Kroegeer, 2012, p. 748). Since the boundary spanners' behaviour is essentially guided by norms and routines assigned by their organisations, trust possessed by these boundary spanners regarding the trustee's boundary spanners can be gradually transferred into attributes of the corresponding organisation (Schilke and Cook, 2013). Over time, these attributes of the trustee then become externalised, whereby trust orientation diffuses into its members forming 'a collective orientation' towards the partnering firm (Zaheer et al., 1998).

This definition means that inter-organisational trust is not simply an aggregation of the trust held by each individual within a trusting firm towards a trusted one, but rather, it is driven by boundary spanners who possess power and authority, manifested in their roles and resources (e.g. corporate and executive staff), which allows them to translate their positive expectations into actionable decisions towards a trustee (e.g. key components procurement or new product development) (Zhong et al., 2017). The implication of this definition means that interpersonal and inter-organisational trust overlap with the characteristics of boundary spanners (i.e. power, authority, and resources) (Knights et al., 2001; Kroegeer, 2012). Thus, inter-organisational trust should be studied in tandem with interpersonal trust, which largely exists between boundary spanners with decision making power (Zhong et al., 2017).

It should be noted that the trustor and the trustee can either be a buyer or a supplier. In buyer-supplier collaborations, the literature contends that supplier-induced disruptions are more likely to occur than buyer-induced ones (e.g. Reimann et al., 2017; Wang et al., 2014). This means that, the buyer tends to be the party, the inter-organisational trust of which, is more frequently violated than the supplier. Hence, this thesis, hereafter, the buyer is adopted as representing the trustor, while the supplier is taken to denote the trustee in inter-organisational relationships.

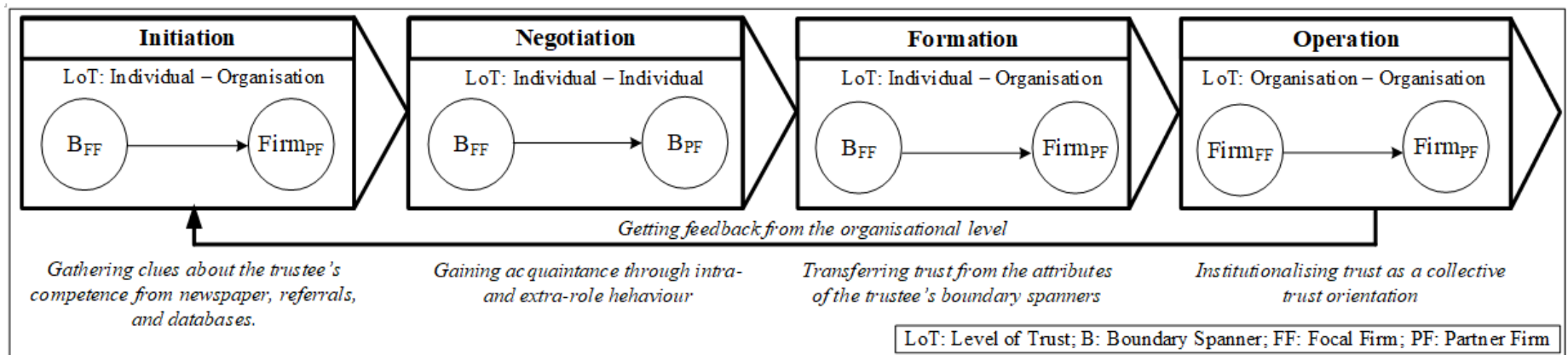


Figure 2 - 1. The processual model of the emergence of inter-organisational trust (adapted from Schilke and Cook, 2013, p. 286)

2.2.1 Dimensions of inter-organisational trust

Among a myriad of dimensions of inter-organisational trust, two of them, namely competence and goodwill, have received the most attention in buyer-supplier relationships (Das and Teng, 2001; Dyer and Chu, 2003; Lui and Ngo, 2004). That is, despite there being other trust dimensions (e.g. contractual trust, deterrence trust, and institutional trust), these two aspects have been commonly adopted dimensions in prior studies (Dyer and Singh, 1998; Ireland and Webb, 2007).

Competence trust is defined as “*the expectation of technically competent role performance*” towards the supplier (Das and Teng, 2001, p. 256). This means, it denotes a supplier’s “*ability to perform according to agreements*” (Nooteboom, 1996, p. 990). It captures the main performance-related criteria, including ability, resources, and reputation (Bachmann and Inkpen, 2011). It should be noted that competence trust not only can be built incrementally over a series of consistent and reliable performance (Lee, 2004; Whipple and Frankel, 2000), for it also can be established based on institutional arrangements, such as corporate reputation and certification (Bachmann and Inkpen, 2011). Corporate reputation mitigates the uncertainties and risks associated with the partner’s competence in that it is perceived to be important social capital to firms, which they are unlikely to undermine by acting against the agreed tasks (Bachmann and Inkpen, 2011). In addition, certification promotes behavioural norms by signalling compliance with standardised procedures of industrial quality or safety (ibid). Competence trust is, therefore, a function of repeated cycles of exchange and/or external institutions that provide safeguards (Inkpen and Currall, 2004).

On the other hand, goodwill trust is defined as “*the expectation that some others in our social relationships have moral obligations and responsibility to demonstrate a special concern for other’s interests above their own*” (Das and Teng, 2001, p. 256). It denotes a supplier’s “*intentions to perform according to agreements*” (Nooteboom, 1996, p. 990). This dimension has social and relational underpinnings that emphasise the motives, honesty, and character of a supplier (Kramer et al., 1996). Over repeated cycles of exchange, these values and motives are manifested in anticipated behaviour, preferences, and the priorities of the partner reinforcing goodwill trust (Lewicki et al., 2006). Hence, goodwill trust is inherently concerned with the alignment of motives and interests of partners.

Past studies have treated these two dimensions as mutually exclusive constructs (e.g. Dirks et al., 2011; Kim et al., 2006). This reflects the notion that a supplier perceived as technically incapable regarding agreement fulfilment does not necessarily indicate that it has

ill intention, while one with a lack of goodwill simply does not mean that it is not capable in the inter-organisational relationship (Ferrin et al., 2007; Kim et al., 2004). The extant literature tends to overlook the connection and interaction between these two trust dimensions. Laaksonen et al. (2008) argue that competence and goodwill trust can coexist in an inter-organisational relationship and develop dynamically over time. A recent study by Connelly et al. (2018) seems to be the first attempt to tackle the differential effects of competence and goodwill trust on inter-organisational performance, reduction in transaction cost, in particular. The authors suggested that competence and goodwill trust differentially contribute to inter-organisational performance through different mechanisms, because of the role of domain specificity (which will be returned to later in the chapter).

So far, the conceptualisation of inter-organisational trust has been explicated in terms of its definitions, transference, and dimensions. It is important to understand its benefits before moving on to the trust violation and repair sections, because these provide fundamental reasons for firms to build and rebuild trust. Thus, the next section reviews the consequences of inter-organisational trust.

2.2.2 Outcomes of inter-organisational trust

A plethora of studies have focused on the positive effects of inter-organisational trust within buyer-supplier relationships through its direct, indirect, and relational outcomes (Delbufalo, 2012). First, its direct outcomes encompass enhanced financial and operational performance through reduced purchasing costs (Spekman et al., 1998), reduced lead time (Panayides and Lun, 2009), and lower transaction costs as well as improved efficiency and productivity (Handfield and Bechtel, 2002; Narasimhan and Nair, 2005). Second, inter-organisational trust indirectly leads to better performance via governance-related aspects, such as improved contract flexibility (Johnston et al., 2004; Luo, 2002); improved process and product innovations; joint problem-solving; increased likelihood of investing in relation-specific assets; and information sharing (Dyer and Chu, 2003). Finally, with respect to relational outcomes, inter-organisational trust engenders commitment (affective and calculative), better cooperation, lower conflict (Zaheer et al., 1998), loyalty (Jambulingam et al., 2009), satisfaction (Smith and Barclay, 1997), and expectation of continuity (Doney and Cannon, 1997).

Inter-organisational trust not only brings about benefits, for it also comes with some negative effects. Prior studies have examined i) disadvantages associated with close relationships; ii) the consequences of negative effects; and iii) the emergence and management of negative effects. First, this stream of studies has discovered that excessive trust leads to optimistic bias (Atuahene-Gima and Li, 2002); relational inertia, caused by over-embeddedness (Gargiulo and Ertug, 2006); complacency (Day et al., 2013); higher risks of opportunism and betrayal (Leonidou et al., 2018; Skinner et al., 2014); and over-investment due to the 'lock-in' effect (Villena et al., 2011).

The second group of studies has identified the potential outcomes, if the negative effects are not properly resolved, such as supplier switching behaviour (Mir et al., 2017) and relationship dissolution (Fleming et al., 2016; Giller and Matear, 2001; Pressey and Qiu, 2007). This stream of research has investigated the process, reasons, and contextual factors of relationship ending, which is intertwined with external (e.g. recession and changing market preferences), relational (e.g. lack of trust and commitment), and organisational factors (e.g. financial burden and poor sales) (Halinen and Tahtinen, 2002; Tidstrom and Ahman, 2006). However, it does not address how a deteriorating inter-organisational relationship can progress, to a certain point, and turn around afterwards, leaving a more dynamic middle ground between relationship dissolution and relationship continuity under-studied.

Finally, a further body of studies has focused on the process of how inter-organisational relationships are damaged. It is widely acknowledged that disruptions and conflicts are ever-present phenomena in inter-organisational relationships (cf. Lumineau et al., 2015; cf. Wang et al., 2014), with those adversarial incidents, accidentally or intentionally induced, having a severe impact on inter-firm performance (Craighead et al., 2007). This stream of literature encompasses trust violation (Bell et al., 2002; Janowicz-Panjaitan and Krishnan, 2009; Wang et al., 2014), one of the key concepts of this research study.

Notably, damaged relationships and violated trust should be carefully managed, where termination is not an option due to significant relationship-specific investment; costs of the dissolution process; potential sanctions for future business; network limitations; and/or costs of new relationship establishment, thus leaving repair as the only viable solution (cf. Salo et al., 2009; Tahtinen and Vaaland, 2006). Moreover, damaged relationships warrant repair efforts, if one or both parties would like to sustain the benefits associated with the trusting relationship (cf. Janowicz-Panjaitan and Krishnan, 2009). This prompts consideration of

another key concept of this research study, trust repair (Dirks et al., 2009; Janowicz-Panjaitan and Krishnan, 2009; Stevens et al., 2015).

So far in this section, a thorough conceptualisation of inter-organisational trust and an outline of the context associated with trust repair has been provided (*Figure 2-2*). Trust repair by its nature is a processual phenomenon, which involves several temporal stages characterised by different relational attributes, trigger events, and interactions experienced by both the trustor and the trustee. The following section delineates the cycle of a trust repair process.

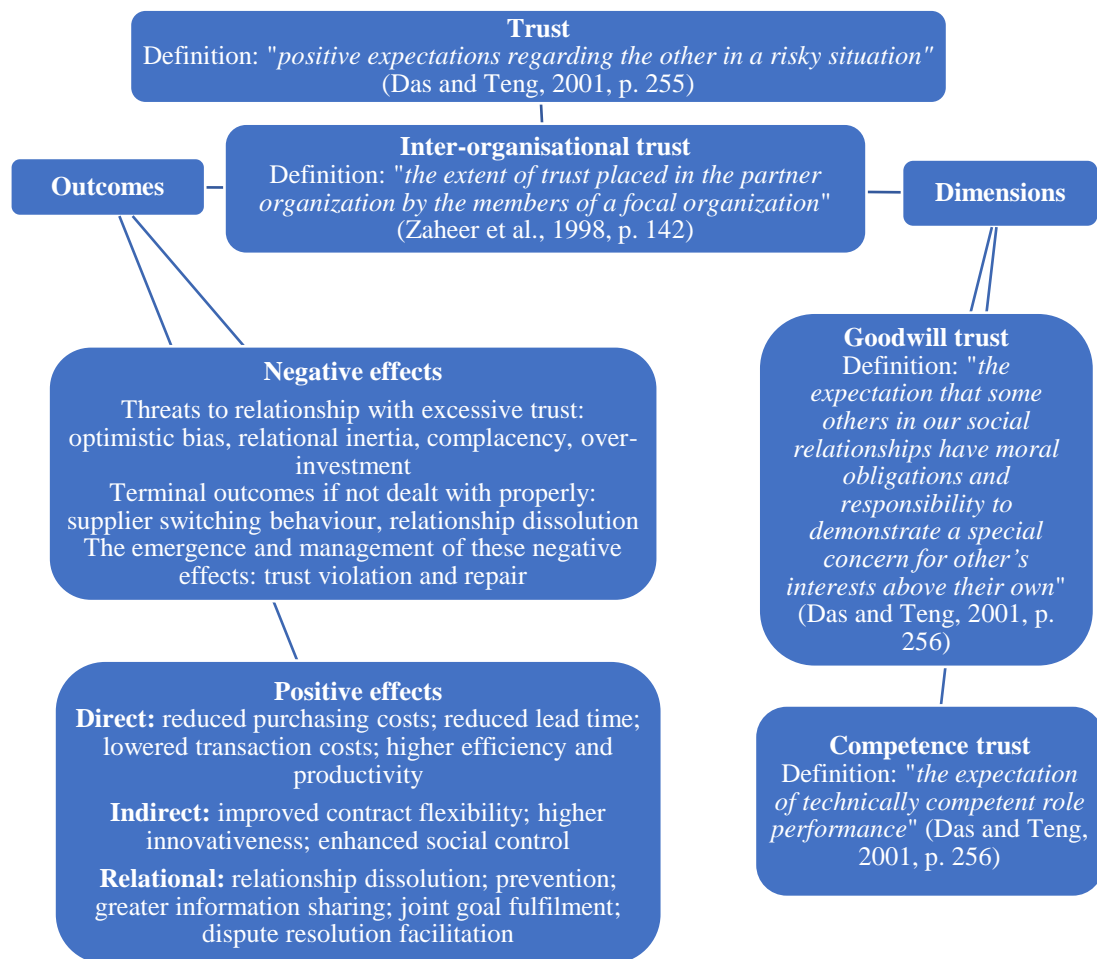


Figure 2 - 2. A breakdown of inter-organisational trust conceptualisation

2.3 THE PROCESS OF TRUST VIOLATION AND REPAIR

In general, a complete cycle of trust repair encompasses four temporal stages, namely: pre-transgression stage; trust violation stage; trust repair stage; and post-repair stage (*Figure 2-3*). The above graphical representation of the trust violation and repair process is established based on the contribution of various studies in order to fill the current void of temporal dynamics in the literature. For this thesis, Dirks et al.'s (2009) process of relationship repair is adopted as the overarching framework. Several terms are adjusted to tailor to the context of this work on trust violation and repair.

No research has examined the trust violation and repair stages together. Thus, for this thesis, definitions from two separate studies on each stage are adopted: Janowicz-Panjaitan and Krishnan (2009) on the trust violation stage and Kim et al. (2006) on the trust repair stage. Whilst Dirks et al. (2009) offer descriptions of each temporal stage, the critical transitions between them are overlooked. These critical moments break the trajectory of the routine process and signal a shift from one stage to the next (cf. Putnam and Fuller, 2014). For this thesis, the concept of turning points is borrowed from the negotiation literature, because the trust repair process inherently involves interactive cycles of actions and reactions in response to the counterpart, over time resulting in mutually acceptable outcomes (Llorente et al., 2013). In addition, Kim et al. (2009) depict the trust repair process as a negotiation between the trustor and the trustee (at the interpersonal level) in an attempt to resolve disagreements over whether the latter should be trusted. Hence, the incorporation of turning points is particularly pertinent and appropriate to the process of trust violation and repair.

A turning point “*alters the process significantly and compels confronting parties to reassess the situation and to formulate a response*” (Llorente et al., 2013, p. 219). This research involves investigating the negative and positive turning points (2 and 4, respectively, from *Figure 2-3*). A negative turning point is characterised by decreasing trust levels, which challenge the prior trust in the pre-transgression stage and diminishes the trustor's competence and goodwill trust placed on the trustee. On the other hand, a positive turning point is characterised by increasing trust levels, which signals the repair of violated trust. Moreover, the transient period signals the end of the trust violation stage, but yet to begin the trust repair stage, referred to as deadlock (Faure, 2005). The buyer and the supplier have to overcome the deadlock resulting from the trust violation so that the positive turning point can be triggered to initiate trust repair.

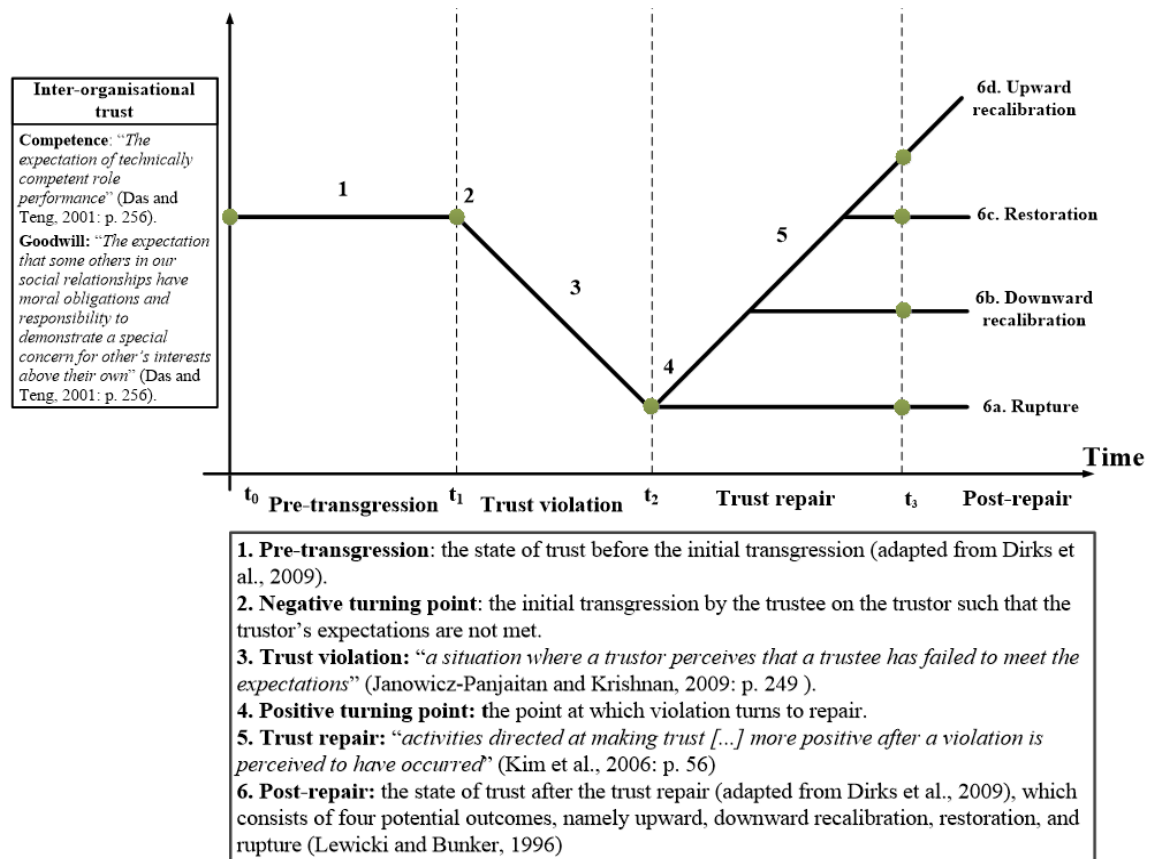


Figure 2 - 3. The process of trust violation and repair adapted from Dirks et al. (2009); Janowicz-Panjaitan and Krishnan (2009); Kim et al. (2006); and Lewicki and Bunker (1996)

2.4 INTERPERSONAL TRUST VIOLATION

This section begins with a review of the definition and types of interpersonal trust violation. Next, several of its consequences are discussed, followed by consideration of the factors affecting the violation.

The definition of a trust violation refers to the perceptual discrepancy between the level of trust before and after a transgression (Ferrin et al., 2007; Schweitzer et al., 2006), which signals a failure in the fulfilment of expectations (Kim and Harmon, 2014; Grover et al., 2014; Frawley and Harrison, 2016). It “causes the positive states that constitute the relationship to disappear and/or negative states to arise, as perceived by one or both parties” (Dirks et al., 2009, p. 69). Not every transgression leads to a trust violation. One is only actualised when a trustor perceives that a transgression has violated its trust (Tomlinson and Mayer, 2009). The

premise of a trust violation is the notion of disconfirmation of established norms perceived by the trustor (Ganesan et al., 2010; Ren and Gray, 2009).

The most examined types of transgression involve competence- and integrity-based violations (e.g. Kim et al., 2004; 2006; Dirks et al., 2009). The former triggers an extensive cognitive judgment resulting in a competence trust violation, whilst the latter tends to engender both cognitive and emotional judgment, resulting in a goodwill trust violation (Lewicki and Brinsfield, 2017). The extant literature suggests that “*individuals tend to weigh positive information about competence more heavily than negative information about competence, they tend to weigh negative information about integrity more heavily than positive information about integrity*” (cf. Kim et al., 2006, p. 51). That is, a single competence-based violation tends to be discounted as individuals are likely to perceive that even a competent person can occasionally perform poorly. Conversely, a single integrity-based violation would engender a more intense reaction that is less likely to be discounted, because only an individual with low integrity would engage in dishonest acts (ibid).

2.4.1 Consequences of interpersonal trust violation

The potential outcomes of an interpersonal trust violation can be classified into three categories, including cognitive, emotional, and behavioural aspects. With respect to cognitive outcomes, a trust violation gives rise to reduced organisational commitment (Robinson, 1996), lower satisfaction (Restubog et al., 2006), and higher turnover intentions (Kickul and Lester, 2001). In terms of emotion-related outcomes, a trust violation leads to negative effects, such as disappointment, frustration, and anger (Barclay et al., 2005; Bies and Tripp, 1996). Those negative cognitions and emotions have critical implications for the trustor, not only in suspending positive exchange, but also, triggering negative exchange behaviour (Dirks et al., 2009). With respect to behavioural consequences, a trust violation may lower the level of cooperation (Bottom et al., 2002), reduce bargaining outcomes (Lount et al., 2008), damage performance, and/or undermine organisational citizenship behaviour (Restubog et al., 2006). Furthermore, a trustor may also engage in negative exchange, such as deviant acts in the workplace, including absenteeism, aggression, and sabotage (Robinson and Bennett, 1995; cf. Luchies et al., 2013); anti-social behaviour in the organisation (Giacalone and Greenberg, 1997); as well as punitive actions, including retaliation and retribution (Bies and Tripp, 1996).

2.4.2 Factors affecting interpersonal trust violation

Two major categories underlining interpersonal trust violation involve relationship- and violation-specific factors. The first category addresses the quality of the relationship between individuals. Prior research has shown that relational closeness between two parties can significantly mitigate the negative perception of a trust violation (Strelan et al., 2017). This relational closeness also leads to higher satisfaction and commitment towards the relationship, which helps to buffer the negative effect of a trust violation (Luchies et al., 2013).

To be specific, relationship dependence includes i) the trustor's investment in the relationship; ii) the quantity and quality of alternative relationships; and iii) structural commitment. The first element refers to instrumental (e.g. money and time) and/or emotional (affective bonds) resources invested in the relationship. The second, suggests that individuals constantly compare the current relationship with alternatives with respect to attractiveness as well as satisfaction (Thibaut and Kelley, 1959). The last element indicates the situation where individuals feel it as being difficult to leave or compelled to continue due to external constraints, such as high switching costs and institutional arrangements (Lewicki and Bunker, 1996). Theoretically, relationship dependence constituted by the three elements moderates how a trust violation is perceived, reacted to, and dealt with (Tomlinson, 2011).

Regarding violation-specific factors, the first refers to the attribution of the cause of transgression. When the trustor encounters such an incident, he or she will attempt to determine its cause (Tomlinson and Mayer, 2009). A causal ascription will be carried out to determine the locus, controllability, and stability of the incident (ibid). Locus of causality refers to the entity responsible for the cause of a transgression. It can be internal (i.e. by the trustee) or external (i.e. by another party or by the situation (Heider, 1958). Controllability is associated with the entity's volitional control or the degree of accountability over a negative outcome. Last, stability refers to the degree of volatility of the cause, i.e. the extent to which it fluctuates or remains constant (Kelley, 1967), which informs the likelihood of future occurrences. These three dimensions of the attribution on transgressions drive the trustor's cognitive, affective, and behavioural reactions as well as the corresponding reparative responses needed (Elangovan et al., 2007; Kim et al., 2006; Tomlinson and Mayer, 2011).

The second factor concerns the timing, i.e. whether the trust violation occurs in the early or late phase of a relationship, for which there is no consensus in prior studies. Kim et al. (2009) argued that trust in the early phases tends to be fragile and likely to be purely transaction-based, with relatively little emotional attachment, which thus exerts a weaker buffering effect

regarding the violation. Empirically, Lount et al.'s (2008) findings supported the belief that early trust violations tend to be more damaging than later ones. While with the counter-perspective, it is argued that later trust violations can shatter the identity and values built over time (Lewicki and Wiethoff, 2000). This implies that a trust violation that occurs later signals a larger discrepancy with respect to ex-ante and ex-post expectations, as individuals from relationships with a longer history tend to have higher trusting expectations (Robinson et al., 2004). Empirically, Bottom et al. (2002) verified that later violations are more impactful than early ones, because of their surprising nature, which triggers more intense emotional and trust-oriented reactions.

The third violation-specific factor is the notion of causal ambiguity. This fundamentally indicates how difficult the cause of a transgression can be precisely determined (Tomlinson, 2011). The causal ambiguity of a transgression is found to negatively affect benevolent attributions stemming from relational closeness, because it triggers a calculative mindset of the trustor to assess the trust violation (ibid). On the other hand, other research has suggested that relationships with a higher dependence tend to demonstrate more benevolent attributions when the cause of a trust violation is ambiguous, which in turn, mitigates the negative impact of the violation (Weber et al., 2005).

The fourth violation-specific factor concerns severity. A trust violation must be large enough to constitute a serious threat to the trustor's self-interest and relational norms (Thibaut and Walker, 1975). Tomlinson (2011) further elaborated that a violation can be evaluated based upon the magnitude of the harm, irreversibility of outcomes, and magnitude of disconfirmation. Minor violations may be neutralised by the trustor's forgiveness or other tolerance mechanisms, such as social and cultural norms that counter the negative effect on trust (Schoorman et al., 2007).

This section has reviewed the relevant studies on interpersonal trust violation, with respect to its definition, types, consequences, and moderating factors (*Figure 2-4*). The same review process will be applied to the inter-organisational trust violation literature in the following section.

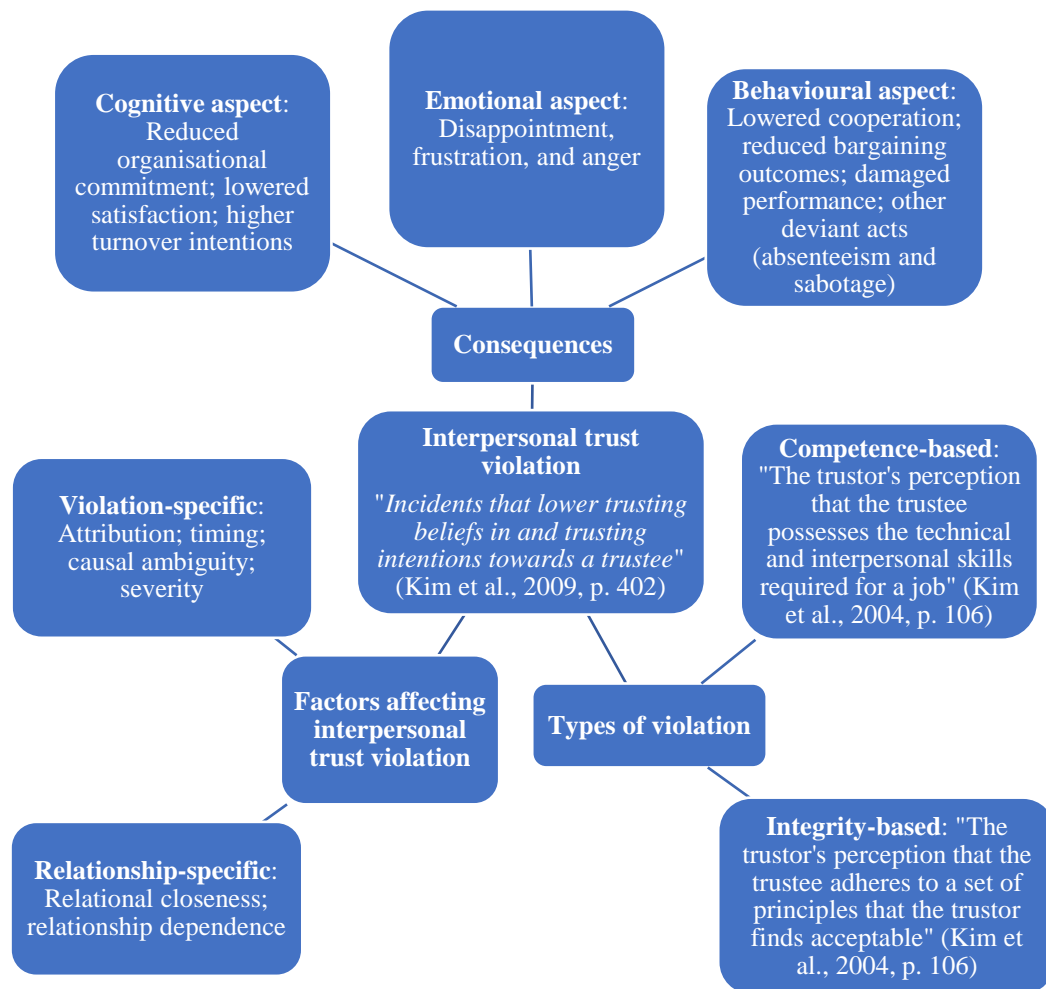


Figure 2 - 4. A breakdown of the interpersonal trust violation literature

2.5 INTER-ORGANISATIONAL TRUST VIOLATION

This section presents the definition of inter-organisational trust violation, followed by a summary of past studies on different types of trust violation. Next, a range of consequences caused by trust violations is discussed. Last, factors that affect inter-organisational trust violation are delineated.

An inter-organisational trust violation refers to “*a situation where a trustor perceives that a trustee has failed to meet their expectations*” (cf. Janowicz-Panjaitan and Krishnan,

2009, p. 249). The most common types examined in the literature are competence- and integrity-based violations (e.g. Bell et al., 2002; Wang and Huff, 2007). With respect to a competence-based violation, this signals that a firm lacks the organisational capabilities to fulfil expected tasks (Li et al., 2013; Wang and Huff, 2007). Thus, as aforementioned, competence-based violations inherently undermine competence trust. On the other hand, integrity-based violations refer to transgressions that disrupt the behavioural norms accepted by the buyer (Wang and Huff, 2007), thereby violating goodwill trust. It is argued that competence-based violations are more readily observable compared to integrity-based ones (Janowicz-Panjaitan and Krishnan, 2009). However, the latter tend to trigger more intense negative emotions than the former, especially in the early phases of the relationship (Wang and Huff, 2007).

As most prior studies do not specifically address the notion of trust violation (with the exception of Bell et al., 2002; Harmon et al., 2015; Laeequddin and Sardana, 2010), for this thesis, similar constructs from adjacent literature have to be relied upon, including inter-organisational relationship quality fade (Whipple and Roh, 2010), reduction of social approval (Bundy and Pfarrer, 2015), B2B infidelity (Leonidou et al., 2018), relationship deterioration (Marcos and Prior, 2017; Vidal et al., 2016), supply chain unethical behaviour (Hill et al., 2009; Kaynak et al., 2015), and psychological contract breach (Eckerd et al., 2013). They share a somewhat similar definition, only slight nuanced, with inter-organisational trust violation, which refers to the buyer's perceived failure in the fulfilment of expectations and the resulting decline in confidence and relational norms in the trustee. These similar constructs are included in the literature review for a more holistic overview.

2.5.1 Consequences of inter-organisational trust violation

Inter-organisational trust violation gives rise to cognitive, emotional, and behavioural outcomes. Regarding cognitive ones, a trust violation causes the buyer to adjust negatively their trust placed on the supplier (Stevens et al., 2015; Wang and Huff, 2007). As a result, the buyer will need to reassess and evaluate the level of risk entailed in the relationship in order to determine whether it is willing to accept further vulnerability (Laeequddin and Sardana, 2010; Leonidou et al., 2018). As to emotional outcomes, a trust violation normally signals unfair treatment (Eckerd et al., 2013), which brings about anger, disillusionment (Hill et al., 2009), resentment, and frustration (Hibbard et al., 2001). However, Eckerd et al. (2013) found

that decision makers tend to suppress their emotions in making trusting decisions and behaviours without being biased by emotional outcomes.

These behavioural outcomes can involve reputational damage, whereby the buyer spreads negative word of mouth and publicity against the supplier (Wang and Huff, 2007). That is, when the buyer shares detailed information of transgressions to others, this will undermine the supplier's trustworthiness as well as bargaining power with other companies (Hill et al., 2009). Moreover, transgressions may negatively affect the buyer's intent to offer a price premium or repurchase (Eckerd et al., 2013). Thus, a trust violation may cause significant financial loss for the buyer and supplier (Laequuddin and Sardana, 2010). Accordingly, a trust violation can require costly operational, human, and time resources in order to repair the damage caused (Laequuddin and Sardana, 2010; Li et al., 2013). Moreover, the supplier may also face a claim or compensation (Wan et al., 2011; Leonidou et al., 2018). Frequently, multinational conglomerates (e.g. Foxconn and Samsung) lodge for compensation of millions of US dollars to their suppliers when they have failed to fulfil the required standards (technews.tw). Additionally, prior studies have shown that the buyer may directly reduce the orders placed with the supplier (Eckerd et al., 2013), search for alternatives, and/or choose to switch to other firms (Hill et al., 2009). That is, in some serious cases, a trust violation will result in relationship termination (Holmlund and Hobbs, 2009; Tahtinen and Vaaland, 2006).

2.5.2 Factors affecting inter-organisational trust violation

As with interpersonal trust violation, the inter-organisational trust violation literature shares similar factors, including violation-specific (attribution of causes, severity, and timing) and relationship ones.

Violation-specific factors

Extant literature has shown that the dimensions (i.e. locus, stability, and controllability) of the buyer's attribution to a transgression significantly predict the effect of a trust violation. The literature has ascribed transgressions with an external locus and low controllability as 'disruption', while those with an internal one and high controllability have been termed 'reneging'. A transgression associated with reneging triggers more intense reactions than one with disruption (Eckerd et al., 2013; Hill et al., 2009). In terms of stability, Wang and Huff

(2007) suggested that transgressions with a higher likelihood of reoccurrence tend to trigger more intense buyer reactions contingent on relationship maturity.

With respect to severity, the magnitude of the violation is a frequently examined dimension (e.g. Wang and Huff, 2007; Eckerd et al., 2013). It signals the extent of salience and harm associated with a violation (Zhao et al., 2007). It has been found that the greater the loss, the greater the decline in trust and the more intense the negative affect (Smith et al., 1999). The magnitude of the perceived violation serves as a key determining factor of whether trust shifts from unconditional (defined as identification-based trust by Lewicki and Bunker, 1996) to conditional trust (Jones and George, 1998). Wang and Huff (2007) also argued that even if the expected future occurrence is small, the magnitude of the violation can also undermine the inter-organisational trust. That means, inter-organisational trust is continuously authenticated based on updated and comprehensive information rather than relying on a particular source (i.e. stability of the cause).

Prior studies have revealed that the earlier a trust violation occurs in an inter-organisational relationship the more negative a trustor will respond to it (Eckerd et al., 2013; Wang and Huff, 2007). Empirical findings seem to support the proposition that prior relational history acts as a buffer to trust violations. Wang and Huff (2007) suggested that the longer the past interaction the greater the zone of trust violation tolerance there will be. Additionally, Eckerd et al. (2013) found that a trust violation is perceived more negatively in a relationship with a shorter prior interaction duration. In relationships with a longer history, a trustor reacts less intensely, possibly due to reduced vigilance, and tends to adopt a forgiving perspective (ibid).

Relationship-specific factors

There are three relationship-specific factors identified in the literature, including contract frame, social approval, and risk-bearing capacity. First, Weber (2017) argued that contract frame (prevention vs promotion) moderates the effect of trust violation (competence- and integrity-based violation in particular). The author suggested that firms with a prevention contract are more likely to react intensively to competence-based violations due to perceived inefficiency of existing governance, while they tend to behave less intensively towards integrity-based violations, because of the assumed supplier opportunism. Conversely, firms

with a promotion contract tend to tolerate more competence-based violations, but integrity-based violations are perceived to be more damaging.

Second, social approval refers to “*evaluators’ general affinity towards an organisation*” (Zavyalova et al., 2012, p. 1079). It is an intuitive and affective mechanism for an evaluator (in this case, the trustor) to make sense and attribute responsibility at the onset of a trust violation characterised by high uncertainty and ambiguity regarding responsibility and consequences (Bundy and Pfarrer, 2015; Scherer et al., 2013). Thus, the trustor is inclined to rely on heuristic processes to evaluate the situation (cf. Bundy and Pfarrer, 2015). The authors argued that high social approval may attenuate certain negative effects brought about by the incident and mitigate the need for an extensive information search in the attribution process.

The third factor pertains to the risk-bearing capacity of the trustor. For larger and less dependent (on the trustee) firms, the risk associated with a negative incident may be perceived to be low, so they can easily forget the issue as long as it is dealt with in an acceptable manner (Laequuddin and Sardana, 2010). In this situation, a negative incident will not be perceived as a trust violation, because the effort of the attribution process can be alleviated or may be deemed unnecessary (ibid). These two factors contribute to the notion of trust resilience, a defensive mechanism that counters the perception of trust violation before initiating the attribution process (Bell and Anderson, 2000; Bell et al., 2002). This section has reviewed the relevant studies of inter-organisational trust violation with respect to its definition, types, antecedents, consequences, and situational factors (*Figure 2-5*).

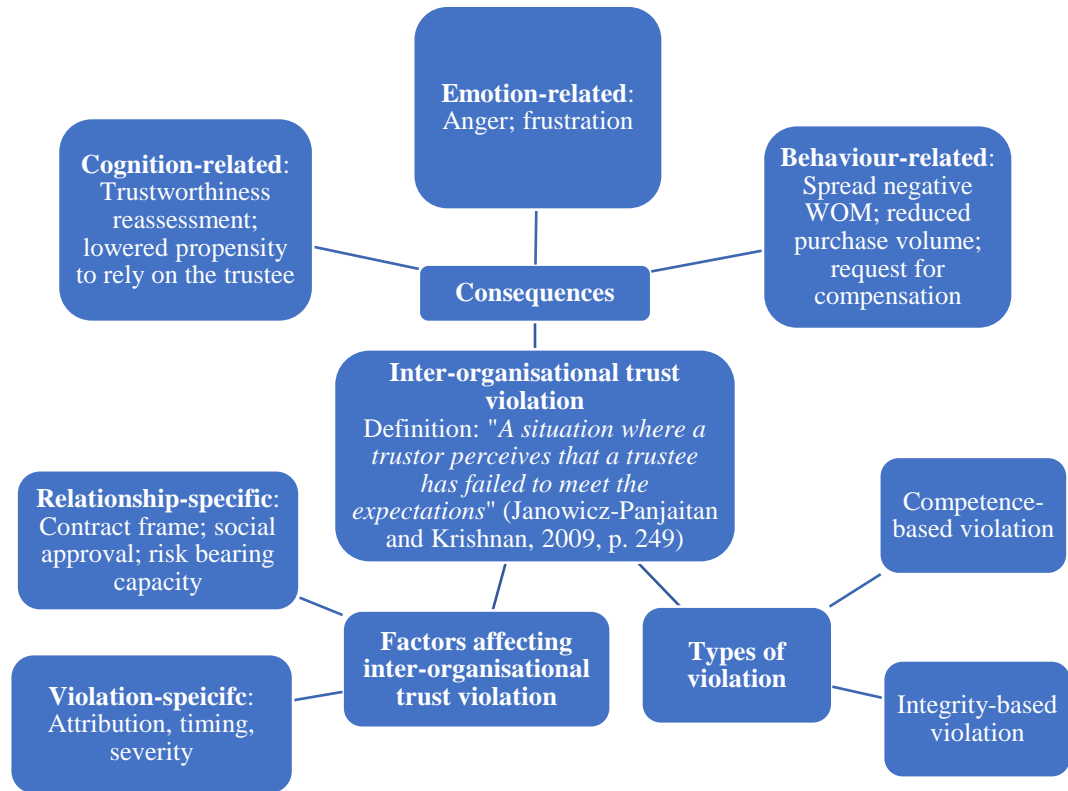


Figure 2 - 5. A breakdown of the inter-organisational trust violation literature

2.6 SYNOPSIS OF THE CROSS-LEVEL TRUST VIOLATION LITERATURE

In the cross-comparison between interpersonal and inter-organisational trust violation literature, it can be seen that interpersonal studies capture more moderating factors than their inter-organisational counterparts, which reflects the argument that the interpersonal level of analysis is more advanced. Regarding possible consequences of trust violation, both the interpersonal and inter-organisational literature cover a full range of outcomes, including cognitive, affective, and behavioural aspects. In relation to the moderators, the interpersonal trust violation literature has been more thorough, including relationship-, violation-, and disposition-specific factors.

The literature generally holds a linear logic that treats the initial transgression and its consequences as a direct and instant cause-and-effect. It has failed to incorporate turning point

analysis to the trust violation stage under the assumption that the trust violation is a one-off phenomenon. Such an automatic reaction rules out the possibility that the trustor and the trustee will engage in communication and interaction to influence the ongoing trust violation process. Such linear logic overlooks the temporal thresholds and laggard effects of transgressions as well as other intervention mechanisms on trust. Hence, a more processual perspective that delineates how a trust violation unfolds over time is warranted.

Furthermore, both interpersonal and inter-organisational studies have rarely taken a bilateral perspective in the trust violation stage, thereby leaving the richness of the interactions between the buyer and the supplier understudied. This is understandable, because a trust violation is essentially determined by the trustor. Accordingly, the literature tends to treat the trustor as a passive observer that does not act and react after a transgression breaks out. Next, the trust repair stage will be illustrated in accordance with the same structure as for the trust violation stage.

2.7 INTERPERSONAL TRUST REPAIR

This section presents the definition, antecedents (in the form of repair approaches), possible outcomes, and corresponding situational factors from the extant literature to facilitate the cross-comparison with its inter-organisational counterpart as well as identifying theoretical and empirical gaps.

Interpersonal trust repair is defined as “activities directed at making a trustor’s trusting beliefs and trusting intentions more positive after a violation is perceived to have occurred” (Kim et al., 2004, p. 105). A successful trust repair must encapsulate cognitive, affective and behavioural aspects (Dirks et al., 2009). If only the behavioural aspect (exchange-specific) is addressed in the process of trust repair, negative cognition and affect could backfire, which could eventually undermine the sustainability of a trusting relationship. Similarly, if only cognition is recovered, which does not translate into behavioural exchanges, the repair effort is also deemed ineffective. Hence, reparative responses initiated by the trustee and/or trustor should aim to address all three elements. The reparative responses adopted by individuals are discussed in the next subsection.

2.7.1 Responses to interpersonal trust repair

The extant literature encompasses three major categories of reparative responses, including social, economic, and structural approaches. Notably, with respect to social approaches, verbal responses appear to be the most studied among the three in the interpersonal context. These mainly involve apologies, explanations, denial, reticence, and promises. Previous studies have shown that apologies can recover interpersonal trust effectively (e.g. Kim et al., 2004; Bottom et al., 2002), because they convey perceived repentance and acknowledgement of responsibility of the trustee regarding a violation, thereby signalling a desire to avoid future offences (Dirks et al., 2011; Kim et al., 2006). However, apologies tend to only work when they are considered to have been conducted sincerely (Lewicki and Bunker, 1996; Hui et al., 2011) and accompanied by consistent behaviour afterwards (Elangovan et al., 2015; Lount et al., 2008).

Since these verbal responses are rarely incorporated individually or in isolation, more recent studies have examined the combined effect of multiple verbal responses on repairing trust (e.g. Schniter et al., 2013; Tomlinson, 2012). Schniter et al. (2013) proposed that a hybrid approach of apology and promise is more effective than a single approach alone. Furthermore, Lewicki et al. (2016) distilled the key features from those verbal responses into a structured apology that consists of six components, namely expression of regret, explanation, acknowledge of responsibility, declaration of repentance, offer of repair, and request for forgiveness. The more components in an apology, the more effective it is to repair damaged trust (ibid). Despite the wide array of verbal responses available, some scholars regard them as “cheap talk” (Bottom et al., 2002; Schweitzer et al., 2006).

With respect to economic approaches, these refer to various forms of compensation, including “discounts, free merchandise, refunds, coupons, and so forth” (Smith et al., 1999, p. 359). The extant literature has investigated the effect of financial compensation across different contingencies (e.g. Desmet et al., 2011; Haesevoets et al., 2013; 2015). Financial compensation has been found to be more effective than verbal responses in repairing cooperative exchange, as it conveys repentance and remedy, which mitigates the negative effect from the violation (Bottom et al., 2002). However, prior research reveals that financial compensation can recover damaged trust only if it is carried out voluntarily (Desmet et al., 2011). Furthermore, in terms of the scope of financial compensation, Haesevoets et al. (2015) revealed that over and equal compensation (in relation to losses incurred) does not make a

significant difference in its effect on repairing trust. This implies that there may be a threshold of economic responses, such that financial compensation alone may be limited in repairing trust. It may improve the trustor's willingness to reconcile, but it does not necessarily lead to continuity intentions (Tomlinson et al., 2004). Apart from the provision of financial compensation, another substantive strategy emphasises different structural arrangements (Dirks et al., 2011).

Structural responses are aimed at imposing regulations on the exchange relationship that limits, if not eliminating, the reoccurrence of the violation (i.e. perceived prevention) (Dirks et al., 2011). These involve the use of policies, contracts, monitoring, and/or hostage posting (Lewicki and Brinsfield, 2017; Nakayachi and Watabe, 2005). Hostage posting refers to a self-sanctioning system signalling that the trustee is willing to give up certain controls or choices, if an expectation is not fulfilled (Nakayachi and Watabe, 2005). It is argued that, only if hostage posting is voluntarily imposed, can trust be recovered, because it not only modifies the current incentive structure, but also conveys the good intentions of the trustee (ibid). Indirectly, voluntary hostage posting indicates that the trustee is confident in meeting the expected tasks, thereby recovering competence-based trust.

Despite a myriad of reparative responses being examined in the extant studies, few have investigated different reparative responses in tandem. For example, whilst Lewicki et al. (2016) and Schniter et al. (2013) addressed the effectiveness of multiple means of verbal approaches, the authors did not investigate the effect of incorporating these responses in a particular order. Similarly, Dirks et al. (2011) examined substantive and non-substantive responses in tandem, but they overlooked the potential synergic and/or interactive effect among different approaches.

Apart from those repair approaches, another antecedent to interpersonal trust repair warrants further attention, which is the bilateral perspective in the process. The majority of prior studies have focused on the effect of one or more reparative responses initiated by the trustee on repairing damaged trust. Only a few scholars have investigated trust repair from a bilateral perspective by considering the active role of the trustor (e.g. Grover et al., 2014; Kim et al., 2009). It has been argued that trustors can significantly influence the effect of the trust repair process, not only because they inherently evaluate the outcome of the reparative responses received, but also, because they are actively involved throughout the process (Kim et al., 2009). The authors conceptualise the process of trust repair as a dynamic interaction between reparative responses provided by the trustee and level of resistance by the trustor,

contingent to the attribution and sense-making of the violation. That is, the trustor may choose to avoid or confront the trustee, which discounts the effect of their repair efforts. In the same vein, another scenario is that the trustor could actively and positively engage in the repair, by signalling tangible instructions and information that clear the air and also, convey ‘last change reactions’ (Grover et al., 2014). Thus, the trustor explicitly clarifies its expectations and provides feedback during the process of trust repair. This processual logic has rarely been examined in the extant literature. Whilst Kim et al. (2009) conceptually addressed the temporal dynamic of trustor-trustee interaction, they largely focused on social responses. Similarly, Grover et al. (2014) explored the bilateral interaction in terms of the communicative elements.

2.7.2 Consequences of interpersonal trust repair

Empirically, most studies have involved adopting surveys and scenario-based experiments conducted on one side of the dyad. Their aim has been to examine the effectiveness of the aforementioned reparative responses on different dimensions of damaged trust, cognition, affect, and exchange, in particular (Dirks et al., 2011). Trust repair in the cognitive dimension is focused on recovering the willingness to make oneself vulnerable in relation to the trustee’s qualities (e.g. Dirks et al., 2011; Ferrin et al., 2007; Kim et al., 2004; 2006). In terms of affect-specific trust repair, past studies have rarely empirically captured it (e.g. Ren and Gray, 2009). Regarding the exchange dimension of trust repair, this has been investigated in terms of the level of cooperation (Bottom et al., 2002) and exchange behaviour (Schweitzer et al., 2006; Schniter et al., 2013). Among the extant studies, the interaction between the different dimensions remains unclear, because of inherent constraints on the research design. This means that, the temporal effect on different trust dimensions in the trust repair stage has been largely overlooked. Importantly, the existing research has rarely involved examining the difference in trust during the post-repair stage and pre-transgression stages as well as the reasons that accounted for such difference. Conceptually, Lewicki and Bunker (1996) proposed four possible consequences, including rupture, restoration, upward recalibration, and downward recalibration ex-post the repair effort. Rupture indicates that a relationship is still terminated after a trust violation, despite repair efforts. It may be that the violation is too severe and hence, is beyond repair. Alternatively, the reparative responses offered by the trustee have failed to meet the trustor’s expectations.

Restoration refers to trust being recovered to the exact level in the pre-transgression stage. Whilst the level of trust may be restored, the nature and characteristics of the trusting

relationship before and after the violation and subsequent repair remain unclear. Prior studies have overlooked the subtle difference of relationship idiosyncrasies in relation to the competence and goodwill dimensions between the pre-transgression stage and the post-repair stage (Kramer and Lewicki, 2010). Downward recalibration as an outcome indicates that the violation has not been satisfactorily settled, so the trustor may well still hold a negative view towards the trustee. In addition to that, the trustor may still perceive that similar trouble may occur in the future, thereby discounting its trusting intention. However, despite the level of trust being negatively recalibrated compared to the pre-transgression stage, both parties can demonstrate an interest in continuing the relationship (Six and Skinner, 2010). In contrast, upward recalibration suggests that the post-repair trust is higher than that pre-transgression. The relationship is in fact strengthened and deepened as reparative responses effectively lead the trustor to rely more on the trustee. This scenario has only been mentioned conceptually and hypothetically. Moreover, past studies have not explicitly depicted the underlying mechanism(s) of how reparative responses function to achieve higher post-repair trust (Grover et al., 2014; Kramer and Lewicki, 2010).

Overall, these outcome categories seem to remain conceptual, because the majority of prior studies have not measured pre-transgression trust. Instead, they have tended to place emphasis on the mitigating effect of reparative responses on violated trust (e.g. Bottom et al., 2002; Desmet et al., 2011; Dirks et al., 2011). To this researcher's best knowledge, only Lount et al. (2008) have illustrated that trust cannot be fully restored, thereby supporting the notion of downward recalibration. The consequences of restoration and upward recalibration of trust have experienced a lack of theoretical and empirical support. Regarding the outcome of rupture, there are already plenty of studies that have investigated relationship termination or exit. As the interest of the present thesis lies in the repair of trust, then unsuccessful repair efforts that result in the rupture of relationships are beyond its remit.

2.7.3 Factors affecting interpersonal trust repair

In general, the extant literature offers three main categories of situational variables, including violation-specific factors, relational characteristics, and environmental factors. These situational variables regarding interpersonal trust repair research, to some extent, share some similarities with those identified in the trust violation section.

First, the characteristics of a violation significantly influence the effect on and the preference for reparative responses (e.g. Kim et al., 2004; 2006; 2009), involving types, severity, timing, and dimensions of attribution. In terms of violation type, competence-based violations can be more effectively repaired by providing apologies that signal internal attribution, while integrity-based ones can be better managed by offering a denial that signals external attribution (Kim et al., 2006). Furthermore, some scholars have suggested that competence-based violations (e.g. supervisory incompetency, lack of caring, and interference) are repairable, whereas integrity-based ones (e.g. deception and abuse of power) are not, in leader-follower relationships (Grover et al., 2014). Schweitzer et al. (2006) also revealed that trust violations can generally be repaired as long as deception is not involved. The severity of violations is a more straightforward factor, being negatively associated with the effect of reparative efforts (Tomlinson, 2011). If a violation is perceived to be very severe, it can only lead to relationship termination. The characteristics of a violation are largely determined by the perceptions of the trustor; their attribution of a violation inherently affects their behaviour. Research has suggested that the trustor can be actively involved in the repair process, rather than acting as a passive observer (Kim et al., 2009). As the trustor, over time, finds out about more attributes of a violation, such as culpability, locus, and fixability, he or she may actively resist the repair efforts offered by the trustee, thereby undermining the effect of trust repair (ibid).

Second, regarding relational characteristics, it entails two factors, namely relationship interdependence and relational closeness. The former has been previously comprehensively discussed in the trust violation section. In a highly interdependent relationship, the trustor and trustee will be more motivated to solve a violation and associated problems jointly (Andiappan and Trevino, 2010). As a result, more effort is likely to be invested in the process of trust repair, which will result in more effective repair of trust. In terms of relational closeness, one of the indicators is the level of prior exchange. Studies have found that previous histories between individuals facilitate forgiveness (Hui et al., 2011) and trust repair (Schniter et al., 2013). Another indicator refers to the level of commitment. A high level of commitment in an interpersonal relationship provides extra motivation to maintain it (Andiappan and Trevino, 2010) and helps to mitigate the negative effects of the violation (Grover et al., 2014).

Third, there are two environmental factors identified from the literature, namely organisational setting and competition. With respect to organisational setting, organisational justice plays a critical role in shaping individual perceptions of the quality of the workplace

(Colquitt et al., 2001). It is argued that procedural justice is likely to promote forgiveness and reconciliation of violated staff, because fair and well-equipped procedures in a firm offer effective intervention to the trust repair process after an interpersonal conflict (Aquino et al., 2001). Regarding the notion of competition, the level has been shown to affect trust repair (Lei et al., 2014). The authors introduced a competing group to the targeted group, where interpersonal trust repair then took place. They found that an external threat from a rival group would facilitate trust repair, because the internal tension can be alleviated by diverting the in-group hostility towards the out-group (ibid).

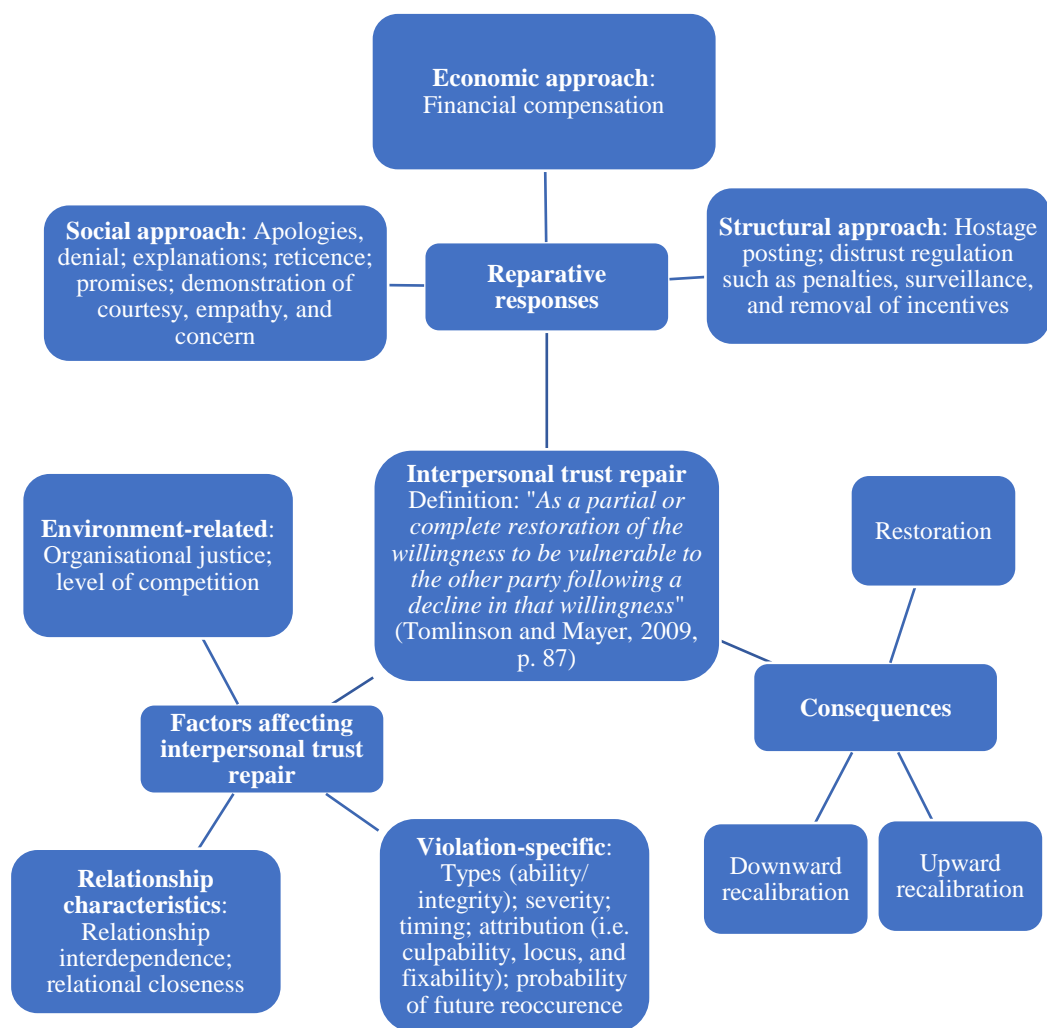


Figure 2 - 6. A breakdown of the interpersonal trust repair literature

So far, the repair of trust at the interpersonal level (*Figure 2-6*) has been reviewed. The next section considers inter-organisational trust repair based on similar structures.

2.8 THE REPAIR OF INTER-ORGANISATIONAL TRUST

There have been limited prior studies on inter-organisational trust repair, and of those available, a significant portion of the terminology and conceptualisation is borrowed from the interpersonal trust repair literature. Ironically, those studies also generally acknowledge that this is a limitation and that the reparative responses required and available are different from their interpersonal counterparts. In addition, inter-organisational trust repair is inherently more complicated, because of the various boundary spanners involved in facilitating the process as well as multiple facets involved in locking in future business continuity (Janowicz-Panjaitan and Krishnan, 2009; Wang et al., 2014). This section presents the definition, repair approaches, possible outcomes, and corresponding moderators from the extant literature to facilitate the cross-comparison with the interpersonal counterparts as well as identifying the theoretical and empirical gaps.

A widely adopted definition of relationship repair is “...*activities by one or both parties substantively return the relationship to a positive state*” (Dirks et al., 2009, p. 69). This is relatively broad, as the authors intended to provide a grand definition for relationship repair that fits various disciplines as well as multiple levels (organisational and inter-organisational in particular). A more fine-grained and tailored definition is “*activities directed at making trust [...] more positive after a violation is perceived to have occurred*” (Kim et al., 2006, p. 56). These activities are aimed at demonstrating the trustee’s trustworthiness and to regulate untrustworthy behaviour in the future in an attempt to facilitate the trustor’s willingness to reconcile and to pursue continuity with the trustee (Gillespie and Dietz, 2009). The concrete reparative responses are illustrated in the next subsection.

2.8.1 Responses to inter-organisational trust repair

Similar to the interpersonal counterpart, there are several categorisations of reparative responses available for recovering damaged trust, such as the substantive vs. non-substantive (Dirks et al., 2009), legalistic vs. non-legalistic (Janowicz-Panjaitan and Krishnan, 2009), cognitive vs. affective (Li et al., 2013), and organisational justice responses (Wang et al., 2014). These responses tend to overlap to some extent from category to category. Among these classifications, Wang et al.'s (2014) organisational justice perspective appears to be the most all-encompassing framework that facilitates the integration of various reparative responses into different organisational justice approaches (i.e. distributive, procedural, interpersonal, and informational justice approaches).

Distributive justice approach

Distributive justice approaches repair inter-organisational trust through modifying the rule of equity after a trust violation. This means that, “*if a supplier invests equitable amounts of efforts, resources, and time into the disruption resolution as its buyer does*”, the buyer will have more trust in it (Wang et al., 2014, p. 376). These approaches not only take the form of investments of resources (e.g. new machinery and new QA recruits), for as Wang et al. (2014) articulated, they also include the provision of financial compensation, which is a critical element in facilitating the reconciliation process by making up the losses from transgressions. The distributive justice approach resembles the economic approach identified in the previous section and remains under-researched compared to interpersonal trust repair literature.

Procedural justice approach

Procedural justice approaches aim to facilitate mutual learning about buyers and suppliers' concerns through rules of accuracy, bias-suppression, representativeness, consistency, and correctability (cf. Leventhal, 1980). These rules ensure that reparative responses are formed jointly, with the needs of both sides being properly construed. As such, these approaches empower both parties and enhance their involvement in deriving decisions. They allow for a timely and appropriate resolution procedure to be formed with minimal disturbance and without future conflict (Wang et al., 2014).

Furthermore, procedural justice approaches have the purpose of providing a fair environment for the continuation of the relationship through enhanced coordination, learning, and routinisation (Luo, 2008). The notion of routinisation is particularly critical to inter-organisational trust repair, because it eliminates the possibility of the same trust violation or similar events from occurring again in the future (Weber, 2017). Kumar et al. (1995) added that routinisation can take the form of structural governance, which consists of operational and contractual arrangements. Hence, the trustee and/or the trustor can refine their operational procedures (e.g. more checkpoints in manufacturing processes) in order to prevent the reoccurrence of faulty issues. Regarding contractual arrangements, a trust violation potentially signals that the current ones may not be sufficient to protect the trustor's welfare. So, the trustor might resort to the modification of existing contracts in order to safeguard future exchanges (e.g. increased monitoring or penalties) (Weber, 2017). In addition, Janowicz-Panjaitan and Krishnan (2009) proposed that trust can be recovered, if such contractual modifications are made voluntarily by the trustee. Malhotra and Lumineau (2011) have empirically examined the longitudinal effect of contractual resolution, in the forms of control and coordination functions, on recovering competence and goodwill trust.

However, despite many of the aforementioned actions residing in procedural justice approaches, they have not yet been empirically studied in the trust repair context, except by Malhotra and Lumineau (2011) and Wang et al. (2014). The paper by Wang et al. (2014) did not examine specific procedural justice approaches per se, but rather, focused on the effect of the induced positive procedural justice perception (as per their survey design) on mitigating different dimensions of trust.

Interpersonal justice approach

Interpersonal justice approaches refer to interpersonal treatments received in communicating the allocation of resources, such as demonstration of regular visits and willingness to help (Liu et al., 2013) as well as whether the trustee treats the trustor with sensitivity, dignity, politeness and respect (Luo, 2007). These approaches are similar to verbal and social responses identified in the interpersonal trust repair literature, but they have been rarely examined at the inter-organisational level.

Informational justice approach

Informational justice approaches focus on the content of information exchanged during the trust repair process. They concern whether the trustor and trustee “*communicate candidly, explain procedures thoroughly and reasonably, communicate details in a timely manner, and tailor communications to each other’s specific needs*” (cf. Liu et al., 2012: 359). Li et al. (2013) addressed the dynamic of such an approach from a bilateral perspective. They argued that at the beginning of the trust repair process, the trustor may play a more active role in clarifying the problem identification and damages incurred for the trustee (termed ‘clearing the air’), while the latter starts to take an active role subsequently in providing feedback regarding the progress of the repair process.

So far, this subsection has integrated inter-organisational repair responses from the organisational justice literature, according to Wang et al.’s (2014) framework. However, whilst this framework has been heavily relied upon, the authors did not specifically investigate the actual reparative responses adopted, simply drawing upon different organisational justice perceptions (ex post the actual effect of different organisational justice approaches). The following subsection discusses the possible outcomes of inter-organisational trust repair.

2.8.2 Consequences of inter-organisational trust repair

As with the interpersonal trust repair literature, the same possible outcomes are conceptualised and proposed, i.e. upward trust recalibration, restoration, and downward trust recalibration (Dirks et al., 2009; Tomlinson et al., 2004), but have remained unexamined due to a lack of empirical findings (e.g. Li et al., 2013; Wang et al., 2014). With respect to the upward recalibration of the post-repair trust, some scholars have argued that the process of trust repair offers an opportunity for both the buyer and supplier to reflect upon and refine their current exchange structures, including operational and contractual arrangements (Li et al., 2013; Kramer and Lewicki, 2010). However, the extant literature focuses on the effectiveness of reparative responses in offsetting the negative impact from trust violations (e.g. Wang et al., 2014); the general repair process; or the key factors of reparative responses (e.g. Crossley, 2015; Li et al., 2013). Since prior studies have not explicitly examined the level of inter-organisational trust in the pre-transgression stage and the post-repair stage, it has not been possible to evaluate the outcome of trust repair (i.e. upward recalibration) and the corresponding conditions that contribute to such an outcome. Moreover, the majority of trust

repair studies have focused on how the negative effects of trust violation are mitigated in a linear cause-and-effect logic, while how the trust repair process actually alters the operational capabilities, contractual arrangements, and also, the relational characteristics, has been overlooked despite some scholarly claims on the potential relational opportunities resulting from such repair (Li et al., 2013; Wang et al., 2014).

In a similar vein, with respect to trust restoration, damaged trust may also be neutralised completely, whereby the post-repair trust is identical to that pre-transgression. This means that the trustor is willing to look past the violation and to maintain its continuity intention as at the pre-transgression level. Similar to upward recalibration, prior studies have failed to explore the intricate modifications during the process of trust repair.

Regarding downward recalibration of post-repair trust, it leads to two possible outcomes, with the first referring to the perseverance of the existing relationship (Janowicz-Panjaitan and Krishnan, 2009). Reparative responses may partially recover damaged trust, leaving some negative effects unaddressed (Tomlinson et al., 2004). In this scenario, the trustworthiness of the trustee is somewhat discounted after the reparative effort, which may manifest itself in a reduction in exchange volume or fewer projects being available to the trustee. That is, the dyadic relationship endures, but the quality of the ongoing one is undermined. The second possible result is relationship termination, which is beyond the scope of the thesis.

Since reparative responses are hardly ever adopted individually in practice, it is suggested that “*any isolated manner can hardly effectively achieve the repair*” (Li et al., 2013, p. 97). Apart from Wang et al.’s (2014) preliminary study of different reparative responses in tandem, the majority of inter-organisational trust repair studies remain conceptual in nature. Not only has the extant literature not examined the relative effectiveness and the particular orders of different reparative responses in their ability to recover damaged trust, for it also has not provided the fundamental rationale behind when and why a particular repair approach is enacted.

2.8.3 Factors affecting inter-organisational trust repair

Three main categories of situational factors associated with inter-organisational trust repair can be identified as: i) violation-specific, ii) dependence structure and iii) exchange structure. First, regarding violation-specific factors, scholars have found that the characteristics of trust

violation, including intentionality, frequency, severity, and type, moderate the difficulty of trust repair (Janowicz-Panjaitan and Krishnan, 2009; Hammervoll, 2011). The more negative the trustor attributes the nature of the violation, the more difficult the trust repair will be to mitigate this effect.

Second, dependence structure concerns the number of alternatives, switching costs, and interdependence (Hammervoll, 2011). Specifically, interdependence refers to total dependence (i.e. the sum of both firms' dependence), while relative dependence refers to one firm's dependence on one another (Kumar et al., 1995). Thus, high relative dependence of the buyer suggests that it may be forced to accept suboptimal treatments of reparative responses (Hammervoll, 2011). Whilst high total dependence means that the exchange accounts for a significant volume for both parties, which manifests itself in more frequent communication and a potentially closer relationship. This brings forward the next category, relationship quality. Scholars have found that, the quality of business relationships may serve as a buffer to recovering the relationship (Vidal et al., 2016). That is, relationships with higher commitment are less likely to experience hindrance during the repair process (ibid).

Last, in terms of exchange structure, business relationships may have different governing mechanisms, including market and relational governance. The former underpins structural governance in terms of extensive monitoring and contractual clauses, while the latter emphasises social elements and implicit understanding. Such a difference in exchange structure determines the preferred reparative responses (Hammervoll, 2011). For example, firms operating under market governance may favour the imposition of new contractual arrangements that eliminate potential violation reoccurrences. However, such a contention has yet to be examined.

All in all, factors affecting the process of trust repair are similar to those regarding trust violation, in general, with an additional factor, the exchange structure, as shown below (*Figure 2-7*). Whilst extensive factors are proposed in the literature, most of them have not been empirically verified. The extant work seems only to capture snapshots of particular moderators (e.g. Wang et al., 2014; Yu et al., 2017), because the majority of researchers have tended to view the process of trust repair as a cross-sectional phenomenon. As a result, the dynamic of how and why the effect of certain factors may change over time is currently unclear.

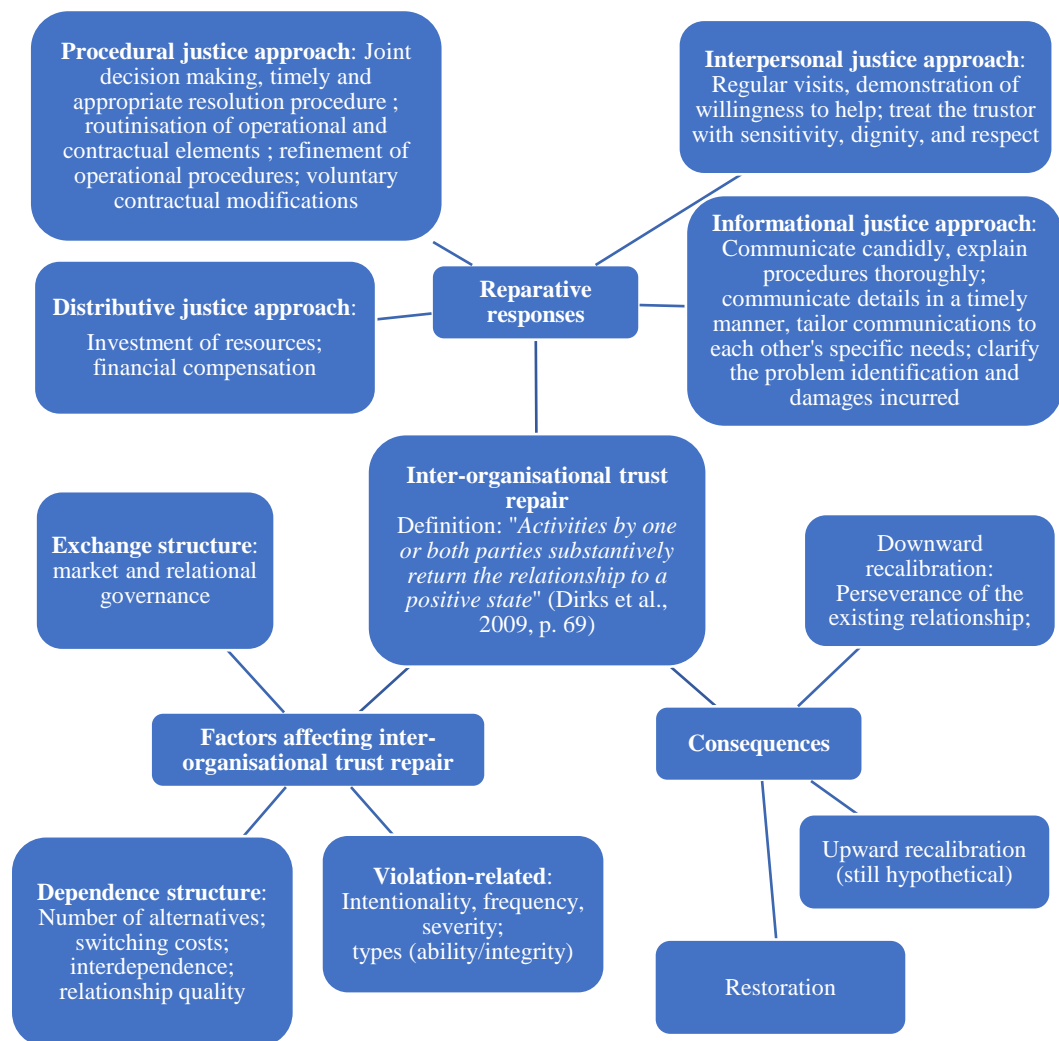


Figure 2 - 7. A breakdown of the inter-organisational trust repair literature

2.9 SYNOPSIS OF THE CROSS-LEVEL TRUST REPAIR LITERATURE

Interpersonal and inter-organisational trust repair differ in terms of several characteristics (Table 2-2), such that the latter is more complex than the former. In the cross-level comparison of reparative responses, it can be seen that interpersonal trust repair studies have involved examining a wide array of reparative responses, but majorly the verbal and social ones. The advancement of interpersonal studies not only reflects the number of reparative responses researched, with the effect of these reparative responses being examined collectively.

Moreover, recent interpersonal research has viewed trust repair as an interactive process in which both the trustor and the trustee actively pursue their best interests (e.g. Kim et al., 2009). On the other hand, regarding inter-organisational studies, scholars have explored a range of reparative responses (e.g. Dirks et al., 2009; Stevens et al., 2015), but the interaction between the trustor and the trustee remains understudied.

	Interpersonal trust repair	Inter-organisational trust repair
<i>Level of interactions</i>	Between individuals (e.g. Ren and Gray, 2009; Kim et al., 2004)	Between boundary spanners and organisations (e.g. Janowicz-Panjaitan and Krishnan, 2009)
<i>Decision making</i>	Individual (e.g. Gillespie and Dietz, 2009)	Collective (e.g. Janowicz-Panjaitan and Krishnan, 2009)
<i>Incentives</i>	Self-interest (e.g. Schweitzer et al., 2006)	Self and organisational interests (Zhang et al., 2011)
<i>Governance</i>	Informal (e.g. Schweitzer et al., 2006)	Formal and informal (e.g. Zhou and Poppo, 2010)
<i>Target of repair</i>	Cognitive and emotional aspects (e.g. Tomlinson and Mayer, 2009)	Cognitive, emotional, and exchange aspects (e.g. Li et al., 2013).

Table 2 - 2. An overview of the key differences and similarities in trust repair at the interpersonal and inter-organisational levels

With respect to moderators, both interpersonal and inter-organisational trust repair studies share similar factors to the violation domain. To be specific, the literature tends to conflate these relational variables in the pre-transgression stage across the trust violation and repair stages, assuming that the effect would be the same over time. Furthermore, trust repair studies across the two levels have incorporated violation-specific factors in the repair process without actually investigating the trust violation process itself. This poses a big problem, as the moderating effect (violation-specific) can be unreal or biased, if trust violations are not comprehensively understood prior to the trust repair. To this researcher's best knowledge, there has not been a temporal investigation focused on both the trust violation and repair stages, which would require a processual and longitudinal design to proceed.

In terms of consequences of trust repair across the two levels, it is clearly the case that the differential and intrinsic consequences of trust repair (i.e. restoration, upwards, and

downwards recalibration) have to be captured. This can be partially explained by the vague definition of trust repair, which means that there is no clearly defined endpoint to the repair process. Thus, it brings about some lingering questions, such as what constitutes an effective or successful trust repair and when does the process stop; the literature has not provided answers to these questions. Furthermore, the extant studies have not compared the outcomes between the pre-transgression and post-repair stages, which prevents researchers from knowing how these different outcomes are essentially induced, under what circumstances and by what repair approaches. It may well be the case that different reparative responses may exert different effects and this could also be so, if implemented in different orders and/or with different intensity. A static research design limits the understanding of temporal effects of reparative responses enacted and corresponding contingencies.

In addition, the inter-organisational trust repair studies have overlooked the behavioural outcomes from the trust repair (e.g. Wang et al., 2014; Yu et al., 2017), as compared with the interpersonal perspective (e.g. Bottom et al., 2002; Schweitzer et al., 2006). The notion of trust repair invariably encapsulates both cognitive and behavioural elements, the latter being particularly critical in the inter-organisational context, as it signals that the trustor is still willing to rely on the trustee (Schoorman et al., 2007). Such reliance manifests itself in the actual exchange between the two parties after the repair effort, which the extant literature has failed to capture. In a similar vein, it can be seen that in the inter-organisational trust repair literature, trust has been largely treated as a unidimensional construct, thus failing to capture more detailed multidimensional attributes. That is, competence and goodwill trust, as well as their interplay over the repair process, are still understudied. Through the consideration of prior studies on trust violation and repair across the interpersonal and inter-organisational levels, key theoretical and empirical gaps have been identified and integrated to develop the research questions of this thesis, which are provided in the next section.

2.10 THE DEVELOPMENT OF RESEARCH QUESTIONS

This section identifies theoretical and empirical gaps as well as developing the main research questions, according to the literature review. As aforementioned, the extant literature reveals that interpersonal trust violation and repair have a wider and more detailed body of knowledge when compared to its inter-organisational counterpart. Yet, even within interpersonal studies, the dynamics of trust violation and repair processes are far from clearly understood. The trust

violation and repair literature has shared some similar blind spots, as identified by Lumineau and Oliveira's (2018) recent study, with respect to buyer-supplier relationships. The trust repair literature suffers from four key shortcomings, which include: i) single point in time, ii) single dimension of trust, iii) single party focus, and iv) single outcome of trust repair.

The first gap concerns the assumed linearity, which manifests itself in the relatively static nature of the trust violation and repair processes. Currently, these processes are treated as a one-off static phenomenon, which overlooks other possible thresholds, lag effects, or interactions over time (Bachmann et al., 2015; Stevens et al., 2015). A process of trust violation and repair consists of multiple feedback loops from interactions between two firms. The state of trust can be changed by additional information acquired in the process (Hui et al., 2011). For example, in the trust violation stage, the trustor may, over time, become more acquainted with the central cause of the violation. As a result, that partner can adjust and readjust their perception towards the trustee, accordingly. For the abovementioned issues, a processual perspective is required to reveal the dynamics of trust over time. When incorporating this processual perspective, critical turning points (i.e. negative and positive ones) should be examined in order to reveal how trust varies across the trust violation and repair stages. The extant literature has not studied the notion of turning points in terms of what characterises a negative and positive turning point and what effect they have on trust dynamics (Gillespie, 2017).

Second, extant studies are characterised by assumed unidimensionality, whereby trust is treated as an aggregated and unidimensional construct (a notable exception is Malhotra and Lumineau, 2011). This aggregated construct hinders a more granular understanding of how inter-organisational relational characteristics develop over time. From the conceptualisation of trust, it can be seen that competence and goodwill trust represent two distinct constructs that operate under different functions. However, the literature has not only failed to incorporate both dimensions of trust in the trust violation and repair processes, for it has also overlooked the potential interplay between the two constructs. In a similar vein, past studies have assumed that competence- and integrity-based violations affect competence and goodwill trust with differential intensity. Specifically, interpersonal trust repair studies reveal that integrity-based violations are more difficult to repair compared to competence-based ones. However, the type of trust violation has never been studied empirically at the inter-organisational level, not to mention the temporal dynamics of it.

Third, the existing studies are characterised by the assumed unilaterality, whereby they have typically centred on the perception of the trustor to assess the trustee's repair efforts. The extant studies have rarely incorporated a bilateral perspective in understanding the trust violation and repair process. It is critical to understand the interaction between the trustor and the trustee and how such interaction and constituting actions and reactions affect trust dynamics, because the violation and repair are inherently a negotiation process between the dyad.

Last, the extant literature has never measured the pre-transgression and post-repair trust. The single outcome of trust repair is, in fact, a by-product of the assumed linearity and without capturing the complete cycles of episodes across trust violation and repair process, it is impossible to gauge what really constitutes different trust outcomes, namely restoration, upward, and downward recalibration (Kramer and Lewicki, 2010). Therefore, it prevents the researcher to draw potential facilitating and constraining factors from different trust repair outcomes, limiting the ability to provide prescriptive advice to the theory and practice (Gillespie, 2017).

To address these shortcomings, this thesis is aimed at exploring the overall dynamics of trust in the violation and repair stages. Two research questions are developed that will address the four key gaps identified above as follows:

Research Question 1

What are the dynamics of competence and goodwill trust in the trust violation stage?

Research Question 2

What are the dynamics of competence and goodwill trust in the trust repair stage?

CHAPTER SUMMARY

This chapter started by identifying sources of buyer-supplier relationship vulnerability and justifying the selection of inter-organisational trust to be the focal mechanism. Next, the conceptualisation, dimensions, consequences of inter-organisational trust in buyer-supplier

relationships were examined. Then, the process of trust violation and repair has been delineated. The trust violation literature was then reviewed across the interpersonal and inter-organisational levels, with respect to their definition, antecedents, consequences, and situational factors. Likewise, the trust repair literature from the two levels also underwent the same process. Lastly, two overarching research questions derived from the extensive literature review were introduced. The next chapter presents the philosophical and methodological considerations that underpin the empirical research.

CHAPTER THREE: METHODOLOGY

INTRODUCTION TO THE CHAPTER

This chapter covers the research philosophy and methodology adopted in this thesis. It begins with a consideration of various philosophical positions (section 3.1) and then continues with a discussion on the research nature (section 3.2), and approach (section 3.3). The following sections explain and justify the adoption of a case study research strategy (section 3.4) along with the overall research process (section 3.5). Section 3.6 describes the research design phase concerning the unit of analysis, processual design, longitudinal approach, multiple case design, case selection logic, and pilot study. Section 3.7 presents the data collection phase, outlining the techniques adopted and access to data. Section 3.8 explains the data analysis phase, including within- and cross-case analysis. Section 3.9 explains the criteria of research credibility and how this research attended to enhancing these. The chapter concludes with a discussion of the ethical considerations and how confidentiality was ensured (section 3.10).

3.1 RESEARCH PHILOSOPHY

Following Saunders et al.'s (2009) research onion (*Figure 3-1*), most research begins broadly with a set of philosophical assumptions, also known as a paradigm, which entails ontological, epistemological, and methodological stances (Guba, 1990). These stances reflect the researcher's world view and in turn, determine the research strategy adopted to address the research questions (Denzin and Lincoln, 1998). Ontological stance refers to the form and characteristics of the social reality that the researcher believes in, while the epistemological stance refers to the way in which this reality can be known to the researcher. Methodological stance refers to techniques the researcher adopts to gain knowledge of the reality (Easterby-Smith et al., 1991).

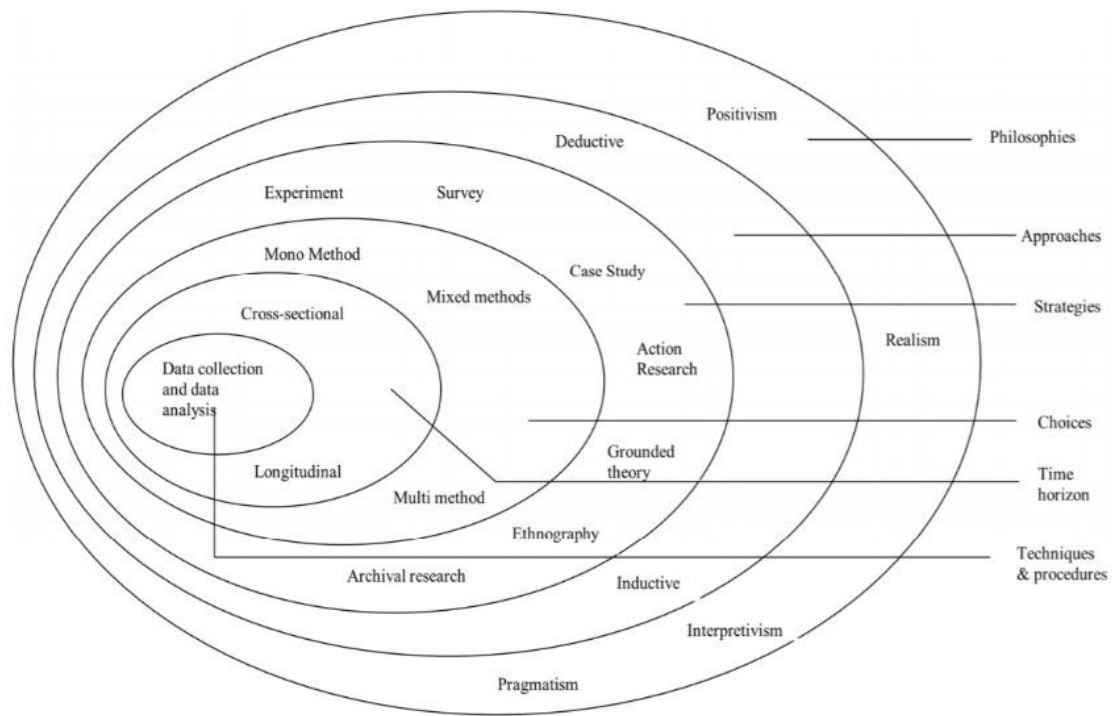


Figure 3 - 1. The research onion adapted from Saunders et al. (2009)

The spectrum across these paradigms spans from positivism at one end to interpretivism at the other end (Guba and Lincoln, 1994). As summarised in the table below (*Table 3-1*), positivists believe that the reality and the process of capturing it is value-free and mainly rely on numerical methods and experiments to derive the objective fact. They embrace empiricism and strive to test causal relationships (Burgess et al., 2006). Interpretivists, on the other hand, believe that reality is socially constructed so they “*study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them*” (Denzin and Lincoln, 2000, p. 3). In this thesis a critical realism position is adopted, because it allows for a phenomenon to be studied in its natural setting and reveals alternative mechanisms operating behind it (Bhaskar, 2010), which is perfectly compatible with addressing the research questions identified in the literature review.

	Positivism	Critical Realism	Interpretivism
<i>Ontology – the nature of reality</i>	Naïve realism – reality exists independently from the human mind	Ontological realism – reality exists independently from the human mind and is stratified by empirical, actual, and real domains.	Ontological relativism – multiple socially constructed realities exist
<i>Epistemology – the nature of knowledge</i>	Objectivism – reality is knowable	Epistemological relativism – the real domain is not observable. The actual (event) and the empirical domains (experienced events) are knowable and observable	Epistemological relativism – facts can be gained through social constructions. Such lived experience is knowable.
<i>Methodology – the way in which knowledge is obtained</i>	Deductive Experimental/ manipulative Verification of hypotheses	Deductive and/or inductive Critical multiplism Falsification of hypotheses	Inductive Hermeneutical/ dialectical Generation of hypotheses
<i>Method</i>	Quantitative – survey, (quasi-) experiment, mathematical and statistical modelling	Quantitative and/or qualitative – case study, statistical analysis, survey, archival, observation	Qualitative – ethnography, grounded theory, case study, observation, narrative

Table 3 - 1. Descriptions of three research paradigms adapted from Guba and Lincoln (1994)

Critical realists assume that reality exists independently from the researcher and is stratified into three domains, namely real, actual, and empirical domains (Bhaskar, 2009 Sayer, 2010). The researcher can only draw inferences based upon observations collected in the empirical domain and in turn, analyse these potential event-generating perceptions, processes, and practices to reveal, completely or partially, causal structures and generative mechanisms in the actual domain (Rotaru et al., 2014, Ryan et al., 2012). However, accessing the real domain is not guaranteed. Epistemologically, critical realists believe that social phenomena are inherently constituted by materials and meanings, which are ascribed by social actors and cannot be measured (Sayer, 2010).

3.2 RESEARCH APPROACH

Following the research philosophy, the research approach is explained. Most research involves adopting a deductive or an inductive approach. With the deductive perspective, a positivistic stance is taken that focuses on hypothesis development and testing, while an inductive one is underpinned by interpretivism that aims to generate theories from collected empirical data (Saunders, 2007). The deductive approach relies on quantitative research data, whereas the inductive approach is based on the qualitative form. It should be noted that there is another approach, namely the abductive approach, proposed by Dubois and Gadde (2002). This refers to an iteration of both deductive and inductive elements, which simultaneously and interactively incorporate empirical data and theories. For this thesis, the abductive approach is adopted, because it realistically captures the cumulative research process that is intertwined by general theory and empirical context (Ketokivi and Choi, 2014).

With the abductive approach being chosen, there are three different types of research identified by Yin (2003), including exploratory, descriptive, and explanatory research. These forms serve different purposes with regards to the phenomenon a researcher seeks to investigate. It should be noted that the boundaries between these research types are blurred (Yin, 2003). Given the research questions formulated in the literature review chapter, this thesis resides in exploratory and explanatory research, because the phenomena regarding inter-organisational trust violation and repair remain broadly defined, with a lack of understanding on the temporal dynamics and boundary conditions. Furthermore, the research questions of this study strive to explore the causal relationship between reparative responses and the corresponding consequences. In addition, since the extant literature suffers a lack of the availability of theoretical frameworks, the explanatory nature allows for the researcher to seek theoretical explanations for the reasons behind some of the cause-and-effect discovered from the empirical investigation. Given that the research approach and the type of research have been delineated, the research onion then narrows down to the selection of an appropriate research strategy.

3.3 RESEARCH STRATEGY

A research strategy is defined as “*a general orientation to the conduct of research*” (Bryman, 2008, p. 698). There are six commonly adopted research strategies that examine inter-organisational relationships. These include survey research, experiment research, case study, action research, grounded theory, and archival research (*Table 3-2*). The table below illustrates the descriptions, advantages, and disadvantages with respect to each research strategy. To choose an appropriate research strategy, it should satisfy three conditions, which are i) the form of research questions, ii) the control over behavioural events, and (iii) the focus of contemporary events (Yin, 2003).

With respect to the first condition, referring back to the research questions of this study, they essentially seek to address the notion of how the trust violation and repair processes unfold with respect to competence and goodwill trust. It requires a research strategy that enables the researcher to trace events, (re)actions, and corresponding perceptions between buyers and suppliers over time. The second condition refers to the extent of control a researcher has over the actual behavioural events. In this study, the researcher had no control over the actual behaviour of inter-organisational relationships and events. Finally, regarding the degree of focus on contemporary events, this thesis is aimed at revealing the dynamics of the two trust dimensions over the course of trust violation and repair, for which the processual and bidimensional perspectives are novel, not to mention that scholarship of the phenomenon at the inter-organisational level is itself rare. Since the current knowledge about the process (unclear causality and mechanisms) and factors involved (unknown boundary conditions) is limited, survey and experiment research can be easily ruled out, leaving case study, action research, grounded theory, and archival research as viable options.

	General characteristics			Selection criteria		
Research strategy	Description	Strength	Weakness	Form of research question	Requires control over behavioural events?	Focuses on contemporary events?
<i>Survey research</i>	Collecting data from large samples and analysing them to demonstrate a statistic picture or test relationships between factors	Relatively easy Low cost Can reduce sample bias	Context-insensitive No variable manipulation	Who, what, where, how, how many, how much	No	Yes
<i>Experiment research</i>	Seeking to determine if a specific treatment influences an outcome and to test theories	Control of variables Replicable	Limited realism Unknown generalisability	How, why	Yes	Yes
<i>Case study</i>	Developing an in-depth description and analysis of a case or multiple cases	Process understanding Demonstrate causality Natural settings Rich data	Costly Time demanding Limited generalisability No experimental control	How, why	No	Yes
<i>Action research</i>	Engaging a direct interaction with research objects, with a potential intervention	First-hand experience Applying theory to practice A close relationship with subjects	Ethics consideration Researcher bias Time demanding Unknown generalisability	How, why	No	Yes
<i>Grounded theory</i>	Developing a theory grounded in data from the field	Creative Potential to conceptualise Rich and in-depth data	Time demanding Researcher bias The assumption on no previous research available Limited generalisability	How, why	No	Yes
<i>Archival research</i>	Seeking out and extracting evidence from archival records (e.g. manuscripts, documents, records, objects, and sound)	Unobtrusive Exact details Broad coverage Can be accessed multiple times	Low retrievability Reporting bias Difficult access	Who, what, where, how, how many, how much	No	Yes/No

Table 3 - 2. An overview of research strategies adapted from Creswell (2002) and Yin (2003)

The methodological fit, proposed by Edmondson and McManus (2007), was taken into consideration by assessing three criteria (i.e. prior work, research design, and contribution to literature) amongst the remaining research strategies. Action research is not appropriate, because the research design of this thesis is inherently retrospective in nature. Active engagement with buyers and suppliers not only does not guarantee the real-time occurrence of a trust violation and repair, but it can also prevent data access because either the buyer and/or the supplier might not be willing to reveal critical information regarding transgressions to the outsider who investigates both firms.

Grounded theory is also not well suited, because it assumes that there are no other explanatory theories available in the prior work. However, in the previous chapter, the trust violation and repair literature was reviewed, which identified a solid theoretical foundation especially from the interpersonal level. Despite the literature lacking a processual and inter-organisational focus, the researcher should not assume that theories used at the individual level do not apply to inter-organisational relationships. In fact, many prior studies on buyer-supplier relationships have relied on those theories (e.g. organisational justice theory, social exchange theory, and attribution theory) (Tomlinson and Mayer, 2009; Wang et al., 2014). Thus, it is inappropriate to adopt grounded theory. Besides, grounded theory approach does not comply with the pre-specified abductive approach as the research process of this thesis aims to commute between theories and practices and balance theory generation and theory elaboration.

Finally, archival research alone is not suitable for this thesis due to the concern of data availability regarding the research design. It is possible that firms record every action and reaction carried out in the event of trust violation and repair, but it is almost impossible to log the changing perceptions from both parties over the process. In addition to this, it is unlikely that firms would give the researcher unlimited access to retrieve everything relevant from their database. Thus, allowing for a certain flexibility and other complementary forms of data (e.g. narratives drawn from multiple informants) is critical to collecting data around sensitive issues. A case study methodology was ultimately chosen, because it is more suitable than other research strategies in terms of addressing the research questions at hand. In the next section, the nature of case study research is explained and the justification for choosing it is elaborated upon.

3.3.1 Justification of a case study research strategy

The case study method “*focuses on understanding the dynamics present within single settings*” (Eisenhardt, 1989, p. 534), which captures the temporal orientation as well as the contextual influences of the studied phenomenon across multiple levels of analysis as well as through multiple sources of data (Meredith, 1998). It can involve collecting both qualitative and quantitative data, including financial data, interviews, observations, and archival data (Eisenhardt, 1989). The case study method allows the researcher to study contemporary phenomena in their real-world settings in which observable practices and patterns can be processed and understood fully to generate relevant theory (Meredith, 1998). It enables the researcher to gain more understanding of complex and emerging phenomena as well as exploring little known variables (*ibid*). It should be noted that the use of the case study method needs to be carefully justified as it is not suitable for all research purposes and circumstances (Eisenhardt, 1989). Stake (2005, p. 443) proposes that “*case study is not a methodological choice but a choice of what is to be studied*”. The case study method was adopted, because it can best address the research questions posed and this is for the following three reasons.

First, trust repair between firms operates in a more complex environment than interpersonal trust repair in that the former deals with more subsystems than the latter (Lumineau et al., 2015). These subsystems manifest themselves in multiple layers of organisational structures across staff (from operating to corporate levels) and departments (from R&D to production and procurement) within a trusting firm to a trusted one. Such subsystems may generate many contingencies and factors that are difficult to capture with experiments and surveys (Stuart et al., 2002). The case study method can overcome such difficulties by allowing for extensive contact between the researcher and the real-life phenomenon, such that the former can gain a holistic view of how companies identify, negotiate, and resolve trust violations as well as identify implicit and explicit rules (e.g. shadow of the past, relationship dependence, and other external factors) that govern decisions made during the trust repair process (Gillespie, 2017).

The case study method is deemed well equipped when studying the phenomena in buyer-supplier relationships (Dubois and Araujo, 2004). In particular, the method facilitates more effectively reconciling differences drawn from multiple respondents with contradictory reasons than statistical methods (Baba, 1988). Additionally, it provides a fruitful avenue to triangulate multiple sources of evidence through which different perspectives can be understood (Yin, 2003). That is, it can capture the interplay between agents with different

agendas and structures with enabling and/or disabling effects (Aastrup and Halldorsson, 2008). Furthermore, the use of multiple sources of data collection and analysis (e.g. interviews, archival documents, and other media) deepens the understanding of the researched phenomenon and cross-verifies the results, which perfectly aligns with the researcher's critical realist philosophy (Easton, 2010).

Second, past studies have either been based upon Dirks et al.'s (2009) theoretical consolidation, which lacks empirical verification, or with little theoretical foundation whatsoever. Notably, the authors urged that more theories need to be incorporated and developed. Hence, with little theoretical underpinning regarding the phenomenon of interest, the case study method can facilitate the researcher in identifying less studied constructs as well as probing their effects on and associations with trust violation and repair (McCutcheon and Meredith, 1993).

Third, the case study method has recently been recommended by trust scholars and operations management academia to enhance existing knowledge of the studied phenomena (e.g. Dirks et al., 2009; Gillespie, 2017; Ketokivi and Choi, 2014; Lewicki and Kramer, 2010). The majority of extant studies on inter-organisational trust repair remain conceptual and in the form of commentary (Gillespie, 2017; Weber, 2017). Among the empirical papers, the survey method appears to be the most dominant research method, which only offers limited understandings due to its cross-sectional focus (Wang et al., 2014). The use of case study research strategy for this thesis enriches current understanding of trust violation repair literature by allowing the researcher to capture the processual perspective of the studied phenomenon (as per research questions), revealing reasons and perceptions behind each event and response, and accommodating different research techniques (e.g. interviews and archival documents). In the next section, the research design phase is explained.

3.4 RESEARCH DESIGN PHASE

The research design is illustrated in *Figure 3-2* below. Next, as part of this case study process, there is a specification of the unit of analysis, temporal orientation, and the explanation for a selection of multiple cases. Then, a pilot study that was conducted before the final data collection is discussed.

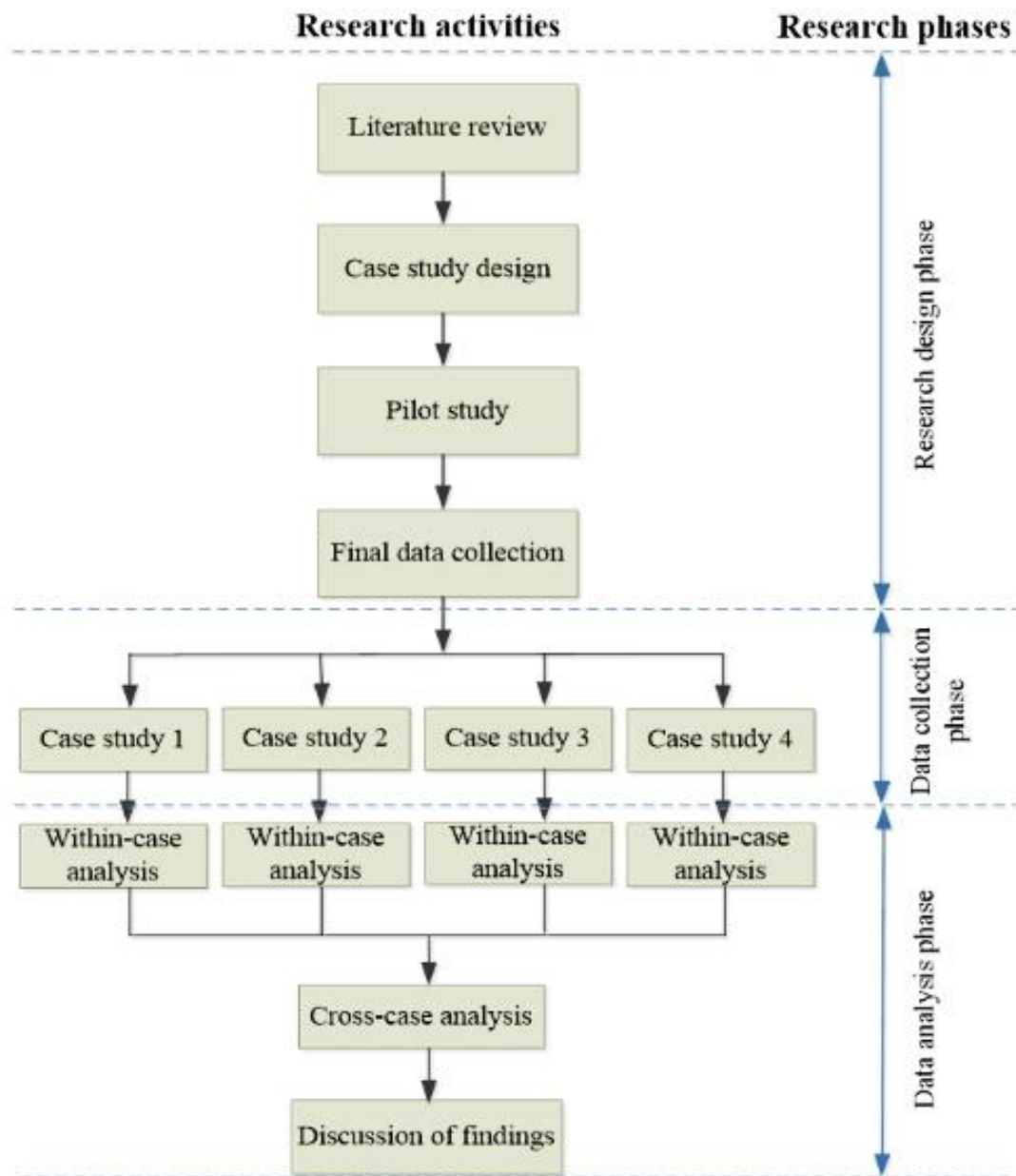


Figure 3 - 2. The overall research processes

3.4.1 Unit of analysis

The unit of analysis indicates the nature of the case examined, which is determined by the research questions (Yin, 2003). These essentially concern (re-) calibration of trust perceptions in the event of trust violation and repair between buyers and suppliers. Hence, the unit of analysis adopted in this thesis is the buyer-supplier relationship. Whilst this research captured both the buyer and supplier perspective in an attempt to reconstruct and deconstruct

the historical events of trust violation and repair, the buyer's trust perception was predominantly focused on as an indication of inter-organisational trust, because this is the party that makes the ultimate trusting decision towards the supplier (Doney and Cannon, 1997). The majority of inter-organisational trust violation and repair studies have ascribed the role of the trustor to the buyer in inter-organisational relationships (with an exception of Bell et al., 2002). In contrast, the supplier's responses help to delineate how a series of events emerged, how various solutions were negotiated, and how different actions were enacted.

It should be noted that the case study method does not necessarily imply a processual logic. As per the research questions, the study is aimed at exploring the temporal orientation underlying sense-making, interaction, and decision making as well as the corresponding impact on competence and goodwill trust between buyers and suppliers over a complete cycle of the trust repair process. A processual perspective is required to capture the dynamics of temporally evolving trust in the event of violation and repair.

3.4.2 Temporal orientation

For this study a processual view was adopted, one focused on the emergence of a sequence of events, activities, and decisions made across predefined stages (Bizzi and Langley, 2012). Pettigrew (1997) suggested that process research should meet six requirements. It needs to capture both vertical and horizontal levels of analysis. The former refers to the impact of multiple actors involved in the process (*ibid*), whilst latter is centred on the temporal interconnectedness, whereby the phenomenon should be traced back in time and across different periods (Bizzi and Langley, 2012). Events and activities triggered by it should be explained holistically, not linearly, in terms of temporality and reasonability (Pettigrew, 1990). In addition, contextual conditions must be understood, as they are “*continually reconstituted within and by processes of interaction over time, generating unexpected and largely uncontrollable chains of activity and events*” (Langley et al., 2013, p. 5).

The extant literature suffers from a lack of processual logic due to the assumed linearity on the process of trust violation and repair. This, it is contended here, can be effectively challenged through identifying a longitudinal evidentiary chain through case study research (Stuart et al., 2002). Moreover, process research offers a critical means to understand the time-dependent relationship of trust perceptions, reactive responses, and the effect of the reparative responses between the dyad along the trust violation and repair process. Through incorporating

a processual view in the case study method, chronological flow of episodic trust violating and repair incidents can be preserved that allows the researcher to examine the cause-and-effect of different events with perceptual and behavioural responses (Miles and Huberman, 1994). For this research, the retrospective design was adopted that was aimed at accessing the process through multiple points in time so as to “*reconstruct and deconstruct events through actors’ memory*” (Halinen et al., 2012, p. 219). This thesis seeks to trace retrospective incidents of trust violation from its emergence, through its development, to its repair. The case study method also ensures access to different actors involved in the cycle of inter-organisational trust repair.

The processual logic informs the time horizon of the case study. For this thesis, a longitudinal approach was employed such that the case studies were carried out over a long period of time. This provides researchers with the opportunity to trace and compare perceptual changes over time (Robinson et al., 1994). A longitudinal approach is particularly pertinent to exploring inter-organisational trust repair for five reasons.

First, due to the vague definition of trust violation and repair, this prevents researchers from being sure about when the process has come to an end. Hence, the longer the time of the investigation the greater the likelihood that the whole process from violation to repair can be observed. In addition, key boundary spanners would be cognizant to temporally separate the trust violation and repair process from regular supply chain disturbances. Furthermore, with a prolonged time frame, the respondents would adopt an ex-post attribution towards the overall trust violation and repair. This would allow them to identify clearly relevant transgressions that set off the trust violation and a series of reparative responses that effectively mitigate the violation in the trust repair stage. Second, the longitudinal approach allows researchers to follow and get involved along the trust repair process with the respondents. That is, it facilitates real-time observation, which can lead to a more realistic nature of the studied phenomenon being captured. Third, a prolonged investigation allows for the respondents to temper some of their immediate negative emotions attached to the transgressions and thus, facilitates their being able to provide more objective narratives. It should be noted that it is impossible to capture completely value-free narratives. A certain degree of subjectivity also prompts more realistic findings, because a trust violation is expected to engender cognitive, emotional, and behavioural impacts.

Fourth, trust violation and repair can be a very sensitive topic in terms of data collection, especially when an inter-organisational relationship is under tension. It is unlikely for

researchers to gain immediate insights into the violation and repair processes, because each party has their own interest to protect and to pursue, which they will be reluctant to let go of initially. Last, but not least, the involved parties would be concerned about sharing such critical information with the researcher, because they may lose some advantages in the negotiation to resolve the matter, if it is leaked too soon.

3.4.3 Multiple case study design and sampling

A multiple case study design was employed for this thesis, because it provides the opportunity to explore the dynamics of inter-organisational trust with respect to differential outcomes. As previously discussed, the literature suggests that four possible outcomes can be witnessed in the post-repair stage, including upward recalibration, downward recalibration, restoration, and termination (Lewicki and Bunker, 1996). However, there has yet to be research examining systematically inter-organisational trust in the pre-transgression and the post-repair stages as well as how the different outcomes have been arrived at.

The multiple case study design can be experiment-like replications across a number of cases (Eisenhardt and Graebner, 2007), used to elaborate contrasting results with explainable theoretical reasoning (Ellram, 1996). This study is aimed at comparing and contrasting the responses and interaction initiated by buyers and suppliers across trust violation and repair together with identifying the contextual factors that yield different repair outcomes. As aforementioned, the focus is on three possible outcomes (i.e. upward, downward recalibration, and restoration). That is, termination is intentionally excluded as it is beyond the scope of the definition of trust repair, which refers to “...activities by one or both parties substantively return the relationship to a positive state” (Dirks et al., 2009, p. 69).

Multiple case studies are particularly suitable for examining time-dependent relationships in which trust repair process is temporally characterised by negative and positive trigger points, corresponding buyer-supplier responses, and the following effects. It allows the researcher to isolate the effect of causal paths through the replication and extension among individual cases (Eisenhardt, 1991). Consequently, this design enhances generalisability (i.e. external validity) and reduces information-processing biases (i.e. observer bias) (Eisenhardt, 1989).

The multiple case study design, however, has been criticised for its lack of depth and weaker understanding compared to the single case design (Dyer and Wilkins, 1991). For the present study, this limitation was ameliorated by incorporating responses across vertical (i.e. operating and corporate level staff) and horizontal (longitudinal design) levels (Barratt et al., 2011). The next subsection discusses what constitutes a ‘case’.

3.4.4 Case study selection

This section explains the sampling logic of the selection of particular cases, which can be broken down into three aspects: i) the selection of theoretical samples, ii) the selection of industry, and iii) the control of confounding factors.

Sampling techniques help the researcher to collect only data from the subject of interest rather than all cases (Saunders et al., 2007). In conducting case studies, theoretical sampling is normally adopted, which means that the criteria of the choice of cases should “*extend the emergent theory or fill theoretical categories and provide examples of polar types*” (Eisenhardt, 1989, p. 537). The theoretical sampling adopted in this study concerns different consequences of the level of inter-organisational trust in the post-repair stage compared to that in the pre-transgression stage. For this inquiry, cases with respect to three distinct outcomes in the post-repair stage were selected, namely upward recalibration, downward recalibration, and restoration (*Table 3-3*). In sum, this sampling plan was chosen with the purpose of deepening the extant understanding of how the process of trust violation and repair results in differential consequences.

The outcomes of trust repair	Sample
<i>Upward Recalibration</i>	Case 1
<i>Restoration</i>	Case 2
<i>Downward Recalibration</i>	Cases 3 and 4

Table 3 - 3. An overview of the theoretical sampling prior to data collection

It should be noted that the theoretical sampling only served as guidance prior to the data collection, because there was no guarantee that the identified cases would match what was

proposed. It was assumed that downward recalibration tends to prevail across cases since a trust violation fundamentally brings about a negative impact on the trustor's financial and operational performance, which may not be easy to get over. Overall, four cases were chosen, which is consistent with Eisenhardt (1989), who argued that four to ten useable sites for multiple case studies are manageable and representative.

In terms of the selection of the industry, the decision was taken to investigate inter-organisational relationships with respect to the Taiwanese electronics industry for three reasons. First, the extant literature suggests that buyers in the high-tech industry tend to place a higher importance on trust towards suppliers, which manifests itself in a sense of affiliation and identification (Ruyter et al., 2001). The industry is characterised by high supply and demand uncertainties, relatively high switching costs and interdependence. As a result, many buyers simply adopt single source suppliers (ibid). In addition, Taiwanese electronics manufacturers maintain their cost competitiveness via close cooperation with upstream and downstream actors (Hwang and Choung, 2014). Therefore, buyers and suppliers operating under such an environment are likely to demonstrate a higher motivation to recover their trust after transgressions and tend to have more buffers in the event of trust violation, than other industries where single sourcing is less likely to prevail.

Second, it is argued that the criteria of case selection should be meaningful and representative as well as being worth investigating (Stuart et al., 2002). In other words, the selected industry and cases should be important and well-known in terms of the significance and relevance. Regarding which, the Taiwanese electronics industry was made a research object, not only because it plays a critical role in the world, but also, the extant literature lacks an understanding of this particular industry (it is predominantly about the automotive industry). The Taiwanese electronics industry is renowned for its complete electronic eco-system supply chain, encompassing integrated circuit (IC) design and manufacturing activities from upstream to electronic equipment manufacturing downstream (*Figure 3-3*).

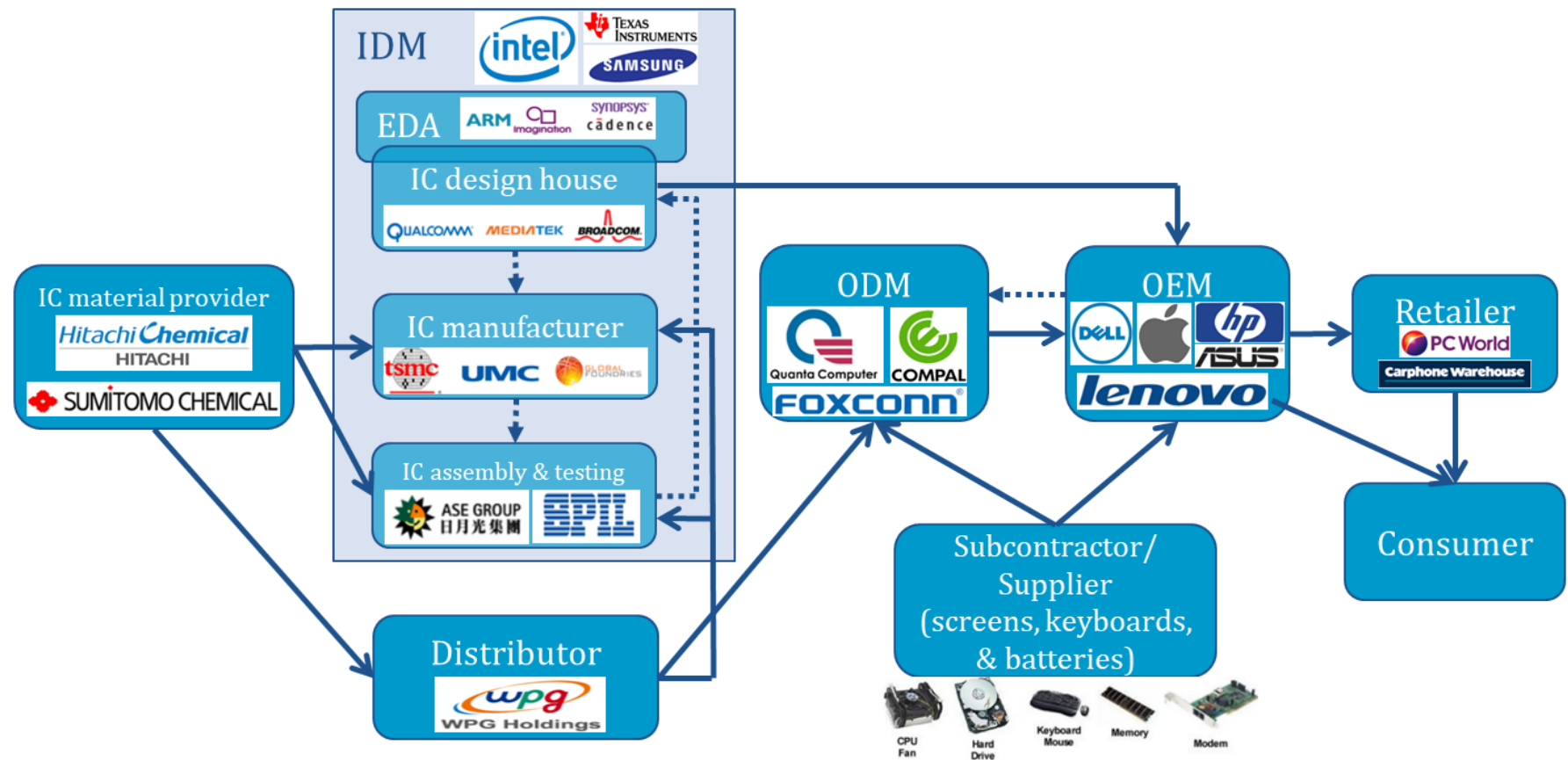


Figure 3 - 3. An overview of a typical electronic supply chain in Taiwan (Source: the researcher)

The Taiwanese electronics industry excels in performance from electronic components to consumer goods (*Table 3-3*). In terms of electronic components, Taiwan accounts for over 70% of wafer foundry, 50% of IC assembly and testing, 40% of panels, and nearly 30% of LCD panels and LEDs worldwide. Regarding consumer goods, Taiwanese electronics firms play a critical role in almost all smartphones, tablets, and laptops' R&D, assembly, and manufacturing (ITRI). In addition, four Taiwan-based manufacturers were listed as the world's top 10 electronics manufacturing services (EMS), with seven Taiwan-based companies listed as the world's top 50 EMS in total (Manufacturing Market Insider, 2017). Hence, this thesis involved collecting data from some of the well-known companies in the industry, which complies with Stuart et al.'s (2002) recommendation.

Product Category	Description	Performance
<i>Integrated Circuit (IC)</i>	Upstream IC design house Midstream IC manufacturing Downstream IC assembly and testing	2 nd globally
<i>Random Access Memory (RAM)</i>	Dynamic RAM (DRAM) and static RAM (SRAM)	4 th globally
<i>Liquid-Crystal Display (LCD)</i>	Upstream key components Midstream and downstream manufacturing	2 nd globally
<i>Light-Emitting Diode (LED)</i>	Upstream epitaxy growth Midstream chip manufacturing Downstream packaging	3 rd globally
<i>Consumer Products</i>	Laptops, smartphones, and tablets	National growth of 3% - 5% annually

Table 3 - 4. The significance of the Taiwanese electronics industry (ITRI, 2014)

The last reason for choosing the Taiwanese electronics industry lies in operational considerations. One of the main drawbacks of case study research is that it is costly and time-consuming. Hence, in order to manage effectively the budget and time, the industry and the target country were selected based on the least cost and geographical proximity, as suggested by Stuart et al. (2002), for which the focal industry in Taiwan was an ideal candidate. This was particularly the case given the researcher was of that nationality.

With respect to the control of confounding attributes, a case study involves controlling for these by setting the boundaries of the study. In this instance, these attributes include the target industry, the country of origin, the characteristics of exchange products, and the length of relationships prior to the violation as well as the overall buyer-supplier relationships. The samples of the present thesis were constrained to the electronics industry in Taiwan with supply chain partners exchanging key components with at least six months of a business relationship prior to the trust violation and at least five years of an overall partnering relationship. These criteria controlled for certain extraneous variation, whilst also leaving some room for operational flexibility.

3.4.5 Pilot study

Pilot interviews were conducted with five industry experts, who had worked in the electronics industry for over 10 years, with middle to senior level positions from various departments (*Table 3-5*). These interviews helped to clarify the wording used in the industry in relation to conceptualisations, implications, and the general industry characteristics regarding inter-organisational trust, trust violation, and trust repair. The use of a pilot study can help prevent mistranslation and misunderstanding between academia and practitioners (Seidl, 2007). A summary note from the pilot study is attached (*Appendix I*).

Respondent	Company	Job title and years of experience
1	Cisco Systems	Senior engineer, 18
2	ChipMOS Technologies Inc.	Plant manager of production department, 18
3	Royal Philips Electronics	Director of the automation department, 20
4	AsusTek Computer Inc.	Senior project manager, 9
5	Lite-On Technology Corporation	Senior project manager, 16

Table 3 - 5. An overview of the pilot interviewees

The pilot interviews facilitated the shaping of the data collection strategies for the main study in four ways. First, they allowed the researcher to compare and contrast the terms and constructs utilised in the literature and the practice, for it was found that some of the constructs were used differently by the practitioners (*Appendix I*). Thus, the pilot interviews further refined the interview guide in terms of the measurement criteria of the trust dimensions across the stages.

Second, due to the highly sensitive nature of the data, the researcher decided to approach buying firms as an access point, because they are more likely to reveal trust violation inflicted by supplying firms. In particular, the buyer is more likely to complain about the violated supplier because their interests have been harmed. Furthermore, the researcher also decided to access the distributors of large manufacturers to increase the chance of a positive response. These firms not only serve as passive and knowledgeable observers of trust violating and repair incidents, but they are also more likely to be willing to share the details of the story.

Third, the snowballing technique was adopted to capture the dyadic view of the trust violating and repair incidents. When the researcher approached a buyer for retrospective insights of a complete trust repair process, he asked whether that party was willing and able to help reach the corresponding supplier for interviewing. This implies that the party may have moved on from the past transgressions. Such an act not only would most likely guarantee access to the violating party for a bilateral perspective, but it would also provide the supplier more freedom to elaborate upon the incidents, which was critical to the data collection of this study.

Last, it should be noted that the industry experts were only able to provide a general picture of trust violation and repair they had experienced with lopsided descriptions due to the different organisational positions held, in different hierarchies and departments. Moreover, since most of the experts were at the management level, their answers lacked details of violating and repair incidents. Furthermore, they concurred that in order to achieve data saturation, cross-hierarchy and cross-functional respondents should be reached. In particular, according to the pilot interviews, project managers and procurement managers were considered to be the most relevant and knowledgeable boundary spanners in the process of trust repair. But this does not detract from the importance of collecting data from corporate

staff such as VPs or directors, as they are critical sources for understanding the goodwill trust of dyads.

3.5 DATA COLLECTION PHASE

Prior to conducting the interviews, the researcher set out the main questions, follow-up questions, and probes to use in them (Rubin and Rubin, 2005). The research questions determined the main questions, which were conveyed in words and phrases that were considered to be more accessible for the interviewees. The follow-up questions comprised keywords for obtaining further relevant information, whilst the probes acted as interview facilitators, which assisted in managing the flow and clarifying unclear meanings. After conducting and comprehending the pilot interviews, the interview guide was formulated by incorporating the industry wisdom obtained from them (*Appendix II*). The data collection phase took the form of semi-structured interviews conducted with key boundary spanners in buyer-supplier relationships.

3.5.1 Semi-structured interviews

Semi-structured interviewing is the primary data collection method of this case study research. The method was deemed the most appropriate for this research, because it could provide a structured framework for the interviewer to follow and at the same time allow for open-ended questions to be put in a conversational manner (Yin, 2003). Each individual case consisted of both buyers and suppliers. Multiple informants were interviewed from the buyer and the supplier side across different levels of boundary spanners, including corporate and operating staff (cf. Janowicz-Panjaitan and Krishnan, 2009). This design method strives to enhance the validity of the information provided by comparing that provided by one boundary spanner with that of another (Glick et al., 1990).

Since semi-structured interviews make a compromise between the formal structured and informal approaches, a graphical illustration and interview guide (*Appendix II*) were drawn up to facilitate the interview process in a systematic and consistent manner as well as keeping it

casual and open for new insights (Berg et al., 2004). The respondents were asked to tell a story as detailed as possible through the stages on the graphical illustration (*Figure 3-4*). They were asked to follow and complete the whole cycle of trust repair by means of both narratives and drawings. That is, not only did the respondents have to describe what was going on in the event of trust violation and repair, but they also had to draw the pattern of inter-organisational trust the relationship went through on a graph as well. Every fluctuation in the dynamics of inter-organisational trust was probed with justifications being requested. Furthermore, the researcher prevented interview biases by i) using technical terms that were comprehensible to the industry experts (from the pilot workshop); ii) avoiding leading questions; and iii) using tape recording to present the evidence verbatim (Sousa and Voss, 2002).

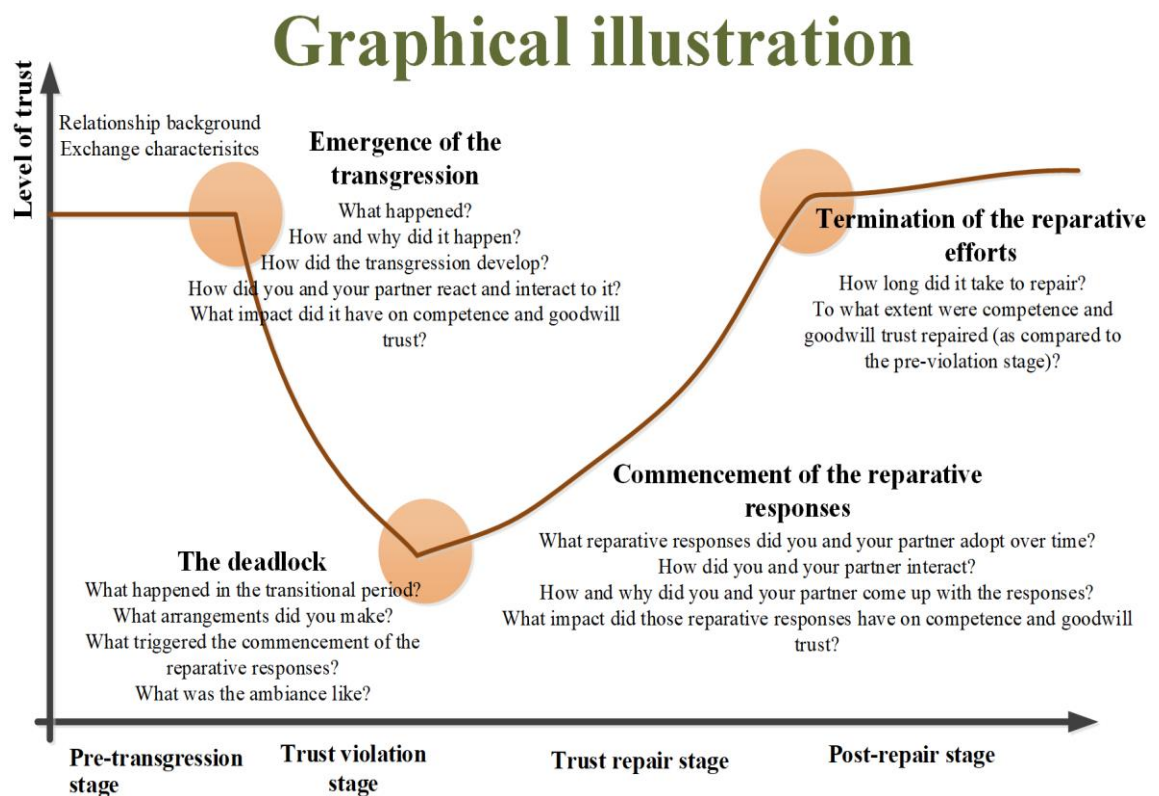


Figure 3 - 4. A graphical illustration for the semi-structured interviews

3.5.2 Data access

The data collection phase began with initiating contacts with potential companies through telephone, email, and in person (a sample of the request for interview email can be found in Appendix II). Based on the pilot study, the first step of the data collection phase was to reach distributors and, buyers because they were deemed to be more knowledgeable about the occurrences of trust violation and repair, with less conflict of interest. Moreover, buyers have been reported as being less reluctant to share past transgressions compared to suppliers. The researcher had attempted to contact as many as possible buyers and distributors in the Taiwanese electronics industry for interview opportunities, because the expected response would be extremely low, particularly when aiming to collect narratives from a dyadic perspective.

Second, not only does a trust transgression entail sensitive information held by companies, for it also requires within-firm and inter-organisational collaboration across different departments. Hence, in order to ensure the necessary access to critical information and relevant boundary spanners from companies, the researcher sought out VP and director level staff permission and delegation, initially. They were staff who could truly make a call on such a decision. It was considered that with their approval, the data collection process would be significantly facilitated.

Third, the researcher adopted a snowballing technique, as mentioned in the previous section, asking the approved buyers and distributors to make a referral to the corresponding suppliers at the end of every interview session. However, the majority of buyers and distributors were reluctant to share their violating suppliers' contact details, so the researcher had to leverage information obtained from the interviews from the buyer's perspective to initiate additional contact with the stated suppliers. Accordingly, the researcher sent emails and made phone calls to request a number of suppliers to agree to be interviewed in order to corroborate information yielded from the buyer's side.

In two years of data collection (2016 – 2017), for this study, 59 face-to-face interviews were yielded in total, with a wide array of personnel across organisational hierarchies and functionalities (e.g. CEOs, GMs, purchasing managers, R&D engineers, and quality assurance teams). The vast majority of the interviews were recorded on tape, except for two, for which

the researcher took extensive notes and asked for additional clarification on every decision made during the trust repair process in order to minimise the chance of misunderstanding and misinterpretation. Overall, 3,060 minutes of interview data were recorded, with an average of 52 minutes per respondent (*Table 3-6*).

	Number of interviews	Length of interviews (in mins)
<i>The four case studies</i>	39	1,965
<i>Industry background and other firms in the industry</i>	20	1,095
<i>Total</i>	59	3,060

Table 3 - 6. An overview of the interviewing time

From the 59 interviews, four case studies were constructed based on 39, which satisfied the predetermined theoretical profiles and the dyadic perspective (*Table 3-7*). The remaining 20 interviews (*Appendix VI*) did not capture the bilateral view on trust violation and repair. Nevertheless, these not only provided useful insights into the industry, but they also allowed the researcher to cross-validate the findings derived from the theoretical sample.

Referring back to the initially proposed theoretical samples based on differential outcomes of trust repair, the four empirical cases satisfactorily met the three post-repair outcomes, upwards, downward recalibration, and restoration. As the data analysis progressed, these outcomes were further be delved into two trust dimensions, competence and goodwill trust (*Table 3-8*). In addition to the initial sampling logic, other attributes and factors from the four empirical cases were acknowledged. In particular, the four cases show a mix of two different interdependencies. Cases 2 and 3 are of high interdependence, while for cases 1 and 4 this is low. Despite categorising as low interdependence, it is a relative term, for the inter-organisational relationships are still financially important to both the buyers and the suppliers. In addition, the four cases show a mix of four different buyer-supplier configurations. Case 1 is characterised by a big buyer and a small supplier, while case 4 is the opposite, entailing a small buyer and a big supplier. Case 2 is characterised by a small buyer and a small supplier, while case 3 concerns a big buyer and a big supplier.

Case	Perspective	Post	Experience in the industry (in years)	Interview length (in mins)	Collection period
1	Buyer (GN)	Director of supplier management department	18	76; 72	Mar 2016; Mar 2017
		Purchasing manager	9	32	Mar 2016
		Project manager	11	31	Apr 2016
	Supplier (GE)	General manager	25	76	Mar 2016
		Sales manager	10	55	Mar 2016
		Sales executive	-	15	Mar 2016
2	Buyer (HE)	General manager	20	45	Dec 2015
		Senior purchasing manager	18	52	Jan 2016
		Quality assurance engineer	-	15	Jan 2016
		Procurement agent	-	15	Jan 2016
	Supplier (IE)	General manager	18	76	Dec 2015
		Account manager	18	55	Jan 2016
		Field application engineer	12	15	Jan 2016
3	Buyer (AC)	Deputy executive officer	25	61	Mar 2017
		Senior vice president	23	66	Dec 2015
		Senior purchasing manager	19	36	Mar 2016
		Senior engineer at research and development	11	33	Mar 2016
		Engineer at research and development	8	30	Mar 2017
	Supplier (AE)	Executive vice president	20	46 ;71	Mar 2016; June 2017
		Senior project manager	12	74; 95	Mar 2016; June 2017
		Purchasing agent	8	30	Mar 2016
		Senior sales manager	10	56	June 2017
		Sales manager	8	40	Mar 2016
		Field application engineer	-	17	Mar 2016
4	Buyer (SC)	Senior purchasing manager	20	60; 38	Dec 2015; Jan 2016
		R&D engineer	11	30	Dec 2015
		Senior R&D engineer	17	50	Mar 2016
		Purchasing agent	8	30	Mar 2016
	Distributor (SH)	General manager	25	70; 70	Nov 2015; Jan 2016
		Sales engineer 1	5	70	Dec 2015
		Sales engineer 2	6	120; 30	Dec 2015; Mar 2016
		Assistant vice president	11	60	Dec 2015
	Supplier (SM)	Production engineer	8	50	June 2017

Table 3 - 7. An overview of the respondents that constitute the four investigated cases

	Case 1	Case 2	Case 3	Case 4
Buyer profile	Global Navigation (GN)	HiTech Electronics (HE)	Alpha Computer (AC)	SemiCon (SC)
Financial indicator (revenue)	\$3.5 billion (2016)	\$8 million paid in capital	\$19 billion (2010) \$15 billion (2011) \$13 billion (2012)	\$350 million (2014) \$270 million (2015)
Number of employees	10000	200	10000	3000
Year of establishment	1990	1985	1980	1998
Nature of business	GPS device manufacturer	Electronic device manufacturer (power supplies in particular)	Consumer electronics OEM	Semiconductor assembly and testing
Supplier profile	Giga Tech (GT)	Integral Electronics (IE)	Advanced Electronics (AE)	SemiElectro Materials (SE)
Financial indicator (revenue)	\$6 million paid in capital	\$3 million paid in capital	\$30 billion (2010) \$22 billion (2011) \$20 billion (2012)	\$10 billion (2012)
Number of employees	250	120	50000	6500
Year of establishment	2000	1990	1985	1970
Nature of business	Metal stamping OEM	PCB manufacturer	Consumer electronics ODM	Semiconductor chemicals
Power structure	Asymmetric (large buyer small supplier)	Symmetric (small buyer small supplier)	Symmetric (large buyer large supplier)	Asymmetric (small buyer large supplier)
Overall interdependence	Low	High	High	Low
Relative dependence (from the buyer perspective)	Moderate to high	Moderate	Somewhat high	High
Supply chain configuration	Midstream	Midstream	Downstream	Upstream
The level of post-repair competence trust	Upward Recalibration	Upward Recalibration	Downward Recalibration	Restoration
The level of post-repair goodwill trust	Upward Recalibration	Restoration	Upward Recalibration	Downward Recalibration

Table 3 - 8. Cross-comparison of the investigated companies from the four cases

Notably, not all the interviews from the four cases were carried out at once. They were collected over time (December to April 2016; April to June 2017), which offered a unique opportunity for the researcher to investigate certain trust repair incidents as they progressed, evolved, and were completed, as suggested by Suddaby (2006). That is, the value of adopting a processual approach and longitudinal time frame could be maximised through enhanced richness, vividness, and validity of the interview data (Langley, 2007).

The researcher wrote the transcriptions, made the translations, and carried the analysis alongside the data collection process. The interview recordings were transcribed verbatim. Since the data collected were in Mandarin, the researcher translated the contents of the transcripts. Then, two doctoral researchers, who were bilingual Mandarin and English speakers, were asked to conduct back the translation of two of the four cases to ensure the accurate representation of the content during the translation process. Such a process helped the researcher to identify unclear concepts or emerging themes during the data collection phase. Moreover, the researcher could go back to the field and obtain clarification until the point where no more new and important information could be provided. This refers to the saturation point, where the researcher decides to terminate the data collection phase, because any further evidence would only marginally contribute to the findings of the study (Eisenhardt, 1989) or maybe not at all. Apart from the semi-structured interviews, sources of secondary data were relied upon, which are discussed in the next subsection.

3.5.3 Secondary data

For this research, secondary data were collected, including: i) industry reports, mainly retrieved from government databases and industrial think tanks; ii) company reports, downloaded from their annual report for shareholders; iii) relevant news obtained online; iv) technical reports, supplied by the interviewees, such as failure diagnosis reports, return merchandise authorisation (RMA), and corrective action preventive action (CAPA); and v) communicative evidence, supplied by a few respondents involving key emails acknowledging the violation.

Documentary analysis was for the purpose of retrieving critical background information on the studied organisations in terms of their operational strategies and strategic decisions, as well as their financial performance. Notably, since many of the case study firms are well-known and listed companies, critical issues (i.e. trust violation) induced by their supply chain

partners and/or corresponding impact are often made public on the news. Moreover, the impact of trust violation is also likely to be reflected in their financial performance depending on the level of its severity. Hence, these sources enabled the researcher to track key event chronologies for verification and supplementary purposes (Bizzi and Langley, 2012). The documents gathered across the four case studies are summarised below (*Table 3-9*).

Data Source	Case 1	Case 2	Case 3	Case 4
<i>Industry report</i>	1. Metal stamping sector report 2. GPS device assembly sector report	1. PCB manufacturing sector report	1. PC manufacturer sector report	1. Semiconductor assembly and testing sector report
<i>Company report</i>	1. The buyer's annual report (2012 - 2014) 2. Academic literature on the buyer's company profile and their strategic analysis	1. Basic information drawn from the buyer and supplier's official websites.	1. The buyer's annual reports (2010 – 2013) 2. The supplier's annual reports (2010 – 2013) 3. Academic literature on the buyer and supplier's company profile and their strategic analysis	1. The buyer's annual reports (2014 – 2017) 2. The supplier's company report. 3. Basic information obtained from the distributor's official website
<i>News</i>	1. The buyer's Strategic movement towards automotive OEM 2. The buyer's declining financial performance	1. RoHS impact on Taiwanese PCB manufacturers	1. The growth of netbook boosted the buyer to the world's No.1 PC manufacturer	1. The financial plummet of the buyer due to reduced orders from the downstream client
<i>Technical report</i>	1. Supplier delivery notice 2. Supplier evaluation guidelines	N/A	1. Failure diagnosis 2. Corrective action and preventive action 3. Supplier evaluation guidelines	N/A
<i>Communicative evidence</i>	N/A	1. Emails addressing the violation and corresponding compensation	N/A	N/A

Table 3 - 9. An overview of the secondary data utilised

It should be noted that for some cases the interviewees accessed the database directly to retrieve those relevant to corroborate their narratives. These documents not only substantiated the actions and interaction adopted during the trust violation and repair, but also facilitated the interviewees in retaining their best memory of the incidents experienced.

3.6 DATA ANALYSIS PHASE

This section concerns the within-case, and cross-case analysis. It should be noted that data collection and analysis are inherently interconnected with each other. For, the present study, as previously mentioned, data collection and analysis were conducted synchronously, in an iterative and sequential manner, with the aim of fulfilling the critical realism stance of revealing the actual domain. Transcribed and translated documents with extensive notes taken from the field and the secondary documents retrieved were incorporated into the case study database from the cloud. Then, these transcripts, notes, and secondary documents were imported into the data analysis software NVivo10 (*Appendix VIII* as a snapshot). This computer-based tool improved the data analysis through facilitating their management (storing, retrieving, and sorting) (Dainty et al., 2000).

3.6.1 Within-case analysis

The within-case analysis aims to gain an in-depth understanding of individual cases. With process research, making sense of the data can be difficult, because of hard-to-conceptualise sequences of events (Bizzi and Langley, 2012), multiple levels and units of analysis with unclear boundaries (Pettigrew, 1990), changing temporal embeddedness (e.g. duration and relevance) (Bizzi and Langley, 2012), and competing interpretations between informants and business parties (Buchanan and Dawson, 2007). In order to alleviate these difficulties, for this work, temporal bracketing, narrative, and visual mapping strategies from Langley (1999) were adopted (*Table 3-10*). These are not mutually exclusive, but rather, act as complementary tools to facilitate data analysis (ibid). How the three strategies are combined in analysing processual data is delineated in what follows.

Strategy	Description	Key anchor point
<i>Narrative</i>	Draw thick descriptions to depict stories, meanings, and mechanisms	Time
<i>Temporal bracketing</i>	Break down the passage of time in a relationship with logical phases to the description of events	Phases
<i>Visual mapping</i>	Represent the order of events of several cases by graphical and tabular illustrations	Events Orderings

Table 3 - 10. Three strategies to facilitate analysis of processual data

The processual data collected were, firstly, subject to a temporal bracketing strategy, which aimed to “*define phases within certain continuity and certain discontinuities at its frontiers*” (Langley, 1999, p. 703). The strategy itself has no theoretical significance, but it does provide a logical structure to the description of events (*ibid*). That is, the process of a complete trust repair cycle was divided into four stages, viz. the pre-transgression, the trust violation, the trust repair, and the post-repair stages.

The breakdown of the processual stages allowed the researcher to reveal how context at a particular point in time “*leads to actions that reconstitute contexts in subsequent time periods*” (Bizzi and Langley, 2012, p. 231). Hence, by bracketing the different time periods, this enabled the capturing of significant reparative responses (actions) and boundary conditions (contexts) in relation to their consequences. The temporal bracketing strategy uncovered the multi-directional causality and facilitated the researcher in deducing potential causes of successive periods, by explicitly exploring previous actions and contexts as well as changes within them (*ibid*). It not only captured the non-linear dynamics of inter-organisational trust triggered by different events and corresponding interaction, for it also identified feedback mechanisms underlying multiple events (*ibid*). Consequently, the temporal bracketing strategy transformed fuzzy and large chunks of data into more discrete, logical, and connected ones. These discrete blocks of temporal data stages were then filled with thick description, termed the narrative strategy.

The narrative strategy is aimed at illustrating the causal linkages across levels of analysis and to “*establish early analytical themes*” (Pettigrew, 1990, p. 180). This is the most elaborate method in case study research. It was adopted so as to provide a thick description that would

enable the audience to assess the transferability of the cause and effect of a particular event. That is, each stage from the temporal bracketing strategy was supplemented with detailed vicarious experiences collected from the field to ensure the richness and depth as well as the chain of evidence. How could these thick descriptions across temporal stages be presented in a coherent and concise fashion? An incorporated visual mapping strategy was deployed to achieve this.

Data processed through temporal bracketing and narrative strategies should be synthesised and consolidated in order to be sensibly reasoned (Miles and Huberman, 1994). A visual mapping strategy is aimed at transforming rich data into graphical and tabular display formats (Langley, 1999). The strategy allowed the researcher to demonstrate thick descriptions with multiple dimensions simultaneously, such that critical events and corresponding perceptions across the passage of time could be illustrated in parallel (Langley, 1999). Accordingly, “*local causal maps*” were provided with mid-level theoretical explanations (ibid, p. 702), thereby facilitating the following within-case and cross-case analysis. Notably, the visual mapping strategy simplified extensive raw data into a comprehensible data illustration for readers, which is critical for ensuring construct validity.

For this thesis, Miles and Huberman’s (1994) analytical framework including data reduction, data display, and conclusion drawing was adopted. It should be noted that strategies identified by Miles and Huberman (1994) and Langley (1999) overlap to some extent, especially between data display and visual mapping. Hence, this section focuses on data reduction and conclusion drawing.

Data reduction

The initial datasets yielded over 100-page case reports for individual cases, with such data overload thus hindering the researcher’s ability to make sense of them and extract their essence (Miles and Huberman, 1994). The texts from the transcripts were firstly broken down into passages. Then, these were abstracted through sorting, discarding, and organising and in turn, assigned into corresponding codes. Codes refer to “*tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study*” (Miles and Huberman, 1994, p. 56). For this study, two coding methods were adopted, namely open and axial coding. For the former, the transcripts from the interviews are summarised and condensed with labelling, whilst through the latter, emergent themes and theoretical constructs

are identified. The relationship between these constructs is clarified and explained by existing theories (Miles and Huberman, 1994).

After the researcher had familiarised himself with the transcripts, notes, and secondary documents, open coding was implemented in NVivo 11. It should be noted that the data reduction of this research began with a set predetermined coding structure derived from the literature (*Appendix VII*). In addition to the pre-determined codes, open coding allowed the researcher to assign emerging ideas to new codes. These were continuously revised and occasionally (re-) grouped into categories, which gradually formed a clearer pattern of the data, in the form of themes. After that, axial coding was adopted to cluster emerging themes and categories into certain theoretical constructs that allowed for further reflection from the extant literature. It should be noted that the majority of the codes derived were based on the literature review and were compatible with the theoretical constructs, thereby limiting the number of categories and facilitating the comparison and analysis of the data. Through the process of coding, contexts that were embedded within the four cases could be identified and explored.

As abovementioned, for this study, both open and axial coding were adopted with respect to various temporal stages created by a temporal bracketing strategy, which enhanced comparability across the focal cases. As an example, relationship dependence themes along with respective categories were initially generated to depict relationship characteristics of buyer-supplier relationships in the pre-transgression stage. With respect to the trust violation stage, codes were derived from interpretation of the descriptions relating to how relationship characteristics buffered or exacerbated the violation, how buyers and suppliers responded to it (perceptual changes, emotional reactions, and behavioural manifestations), what consequences it brought to the dyad, and what the characteristics of the transgression were.

Conclusion drawing

Conclusion drawing is the final stage of within-case analysis, as proposed by Miles and Huberman (1994). It is aimed at identifying patterns and causality between the variables in the data, which require further explanations to draw the necessary conclusions. For example, the themes relating to trust perceptions in the event of trust violation were compared with those relating to relationship characteristics as well as violation characteristics so as to identify relevant patterns. The process of pattern matching resulted in the development of several theoretical constructs, which allowed for further reflection on the existing literature. The

present research also allowed for emergent constructs to be uncovered between the general theory and empirical observations (Glaser and Strauss, 1967). Moreover, emergent empirical patterns were constantly matched with the research questions to arrive at a firmer conclusion. In addition, to facilitating conclusion drawing, the researcher of this thesis had met with his supervisors at regular intervals to ensure that there was a consensus when interpreting the data.

To sum up, the within-case analysis captured the differences and similarities of the empirical observations from the different respondents within each case. First, the researcher separated 59 interviews into two categories, four dyadic and 15 non-dyadic case studies. The former were built on 39 interviews that yielded dyadic responses, while the latter were formed based on 20 interviews that yielded unilateral responses. Then, those case studies were divided into temporal stages based on temporal bracketing strategy that broke the whole duration of the inter-organisational relationship down into several logical discrete blocks (i.e. pre-transgression, trust violation, trust repair, and post-repair). Next, the researcher streamlined every incident, action, and reaction within each discrete stage (i.e. trust violation and trust repair stages). A narrative strategy was deployed to provide thick descriptions of each temporal block. Those thick descriptions were compared to and contrasted with the graphical illustrations yielded from the interviews to explain the patterns and identify unclear or mismatch between the narrative and the pattern (the researcher then went back to the respondents for further clarification).

Following that, the transcripts were coded and transformed into categories and themes that were theoretically meaningful. Last, a visual mapping strategy was incorporated to display the constructs drawn from the data and to deliver insights with categorical and graphical representations. Within-case analysis facilitates providing explanations about the case and maintaining conceptual coherence with the empirical data (Yin, 2003). Then, the within-case analysis from the different cases was integrated, thus allowing for cross-case analysis.

3.6.2 Cross-case analysis

The cross-case analysis helps researchers to integrate the findings of a series of case studies (Yin, 2003). It boosts transferability as the patterns from the within-case analysis are identified and recognised across different case studies (Miles and Huberman, 1994). That is to say, it enables generalisation across the findings. The authors also proposed that cross-case analysis enriches the researcher's understanding of the social phenomenon investigated, because it

allows for drawing more insights from similar settings. As held by Miles and Huberman (1994), the key challenge is a balance between the particular and the universal. In this study, the findings of within-case analysis fed into a cross-case analysis for similarity and difference identification across the four cases. Furthermore, the researcher then sought explanations for any differences revealed. In particular, this study involved following Stake's (2006) three-track technique to achieve such a balance (*Table 3-11*).

	Aim	Description
Track I	Emphasising the findings	Individual contexts of different cases are kept tentatively.
Track II	Merging the findings	Different cases are sorted based on their similarities. Similar cases are merged. Brief contextual backgrounds are maintained.
Track III	Factorising the findings	Context-bound findings are transformed into factors. Information about contextual backgrounds is removed. Factors are sorted and merged based on the similarity.

Table 3 - 11. Three tracks that guide cross-case analysis adapted from Stake (2006)

It should be noted that it is virtually impossible to compare across cases based on the absolute figures reported by individual cases. For example, a trust violation in one case may cause a loss of \$10 million and \$20,000 from another, but the two violations may be perceived to have the same severity by the two different buyers due to their level of risk tolerance. To facilitate cross-case comparison with respect to various constructs, for this study, a benchmark (e.g. the closest alternatives) was established, which enabled the researcher to make sense and determine the relative level of relationship characteristics between the four cases. For example, if the supplier could not be replaced by their closest alternatives at all, the relationship dependence and competence trust would be high.

3.7 RESEARCH CREDIBILITY – RELIABILITY AND VALIDITY

Many scholars argue that the rigour of case study research should be assessed based on three types of validity, namely construct, internal, and external, and reliability (Seuring, 2008; Stuart et al., 2002). The researcher is fully aware that the case study method is not without limitations. It has been widely criticised for its lack of generalisability, rigour, operationisation, and justification. First, the major concern of the case study method lies in its lack of generalisability. This limitation is generally built on the assumption of statistical generalisation. However, case studies rely on analytical generalisation, with the emphasis being on theoretical propositions rather than populations (Yin, 2003). In particular, regarding the single case setting, such a theory-focused approach can lead to narrow, idiosyncratic, and occasionally too complex theories as this is too context-specific, which undermines generalisability (Eisenhardt, 1989). The robustness of the theory can be reconciled and enhanced by adopting the multiple case design that replicates theoretical patterns of expected outcomes (Barratt et al., 2011).

The second concern about the case study method is its lack of rigour. Many studies have demonstrated a weak linkage between the literature reviewed and the methodology adopted as they tend to proceed with a presumption that an applicable theory does not exist and have failed to address their theoretical contributions clearly (Stuart et al., 2002). Moreover, many researchers have failed to justify systematically the use of the case study method or have simply adopted it to collect additional supporting evidence (Seuring, 2008). Hence, due to ambiguous justifications of the method used and data analysis carried out the rigour of case study research cannot be ensured (Ketokivi and Choi, 2014).

Some of the aforementioned criticisms were alleviated by systematic and careful justification of the deployment of the case study method in the current work. This means that the rationale of this method was connected closely with the literature and research questions. Then, an analytical approach was adopted to carry out multiple case studies with a processual focus rooted in a critical realism perspective (Eisenhardt and Graebner, 2007; Langley, 1999). Furthermore, several measures were deployed to enhance research credibility, as delineated below (*Table 3-12*).

Credibility	Description	Strategy
<i>Construct validity</i>	The extent to which the measurements reflect the phenomena they are supposed to (Yin, 2003)	Triangulation Data were collected from key informants and secondary documents from the target companies (e.g. company annual reports, news, and internal reports)
		Demonstrating a chain of evidence The analysis process was conducted step-by-step in order to inform the reader how the summary was derived.
		Asking key informants to review the case study research The longitudinal approach allowed the researcher to ask key informants to review the draft of a preliminary case study report.
<i>Internal validity</i>	The causality between certain conditions and others can be established (Yin, 2003).	Pattern matching between actual and proposed patterns A cross-comparison between the empirical evidence and the theoretical framework derived from the literature was conducted. If different patterns across multiple cases can be explained by understandable reasons, the confirmation becomes stronger (Yin, 2003).
<i>External validity</i>	The extent to which the research findings can be generalised beyond the particular case study (Yin, 2003).	Different logic behind generalisation Unlike statistical generalisation from survey and experiment methods, case studies rely on the analytical generalisation that generalises results to the general theory (Yin, 2003). Case study research relies on theoretical sampling, whereby cases with significant theoretical differences are selected to yield better theoretical niches (Eisenhardt, 1989).
<i>Reliability</i>	The extent to which the operations of the research can be repeated with the same results (Yin, 2003).	Case study protocol A case study protocol was utilised that demonstrated clear procedures with sufficient reasons regarding how the data were generated and interpreted.
		The use of a database A case study database was established that enable notes on the research to be easily retrieved.

Table 3 - 12. An overview of strategies adopted to ensure research validity and reliability

3.8 ETHICAL CONSIDERATIONS

Given the importance of ethics in conducting research, especially on sensitive topics like this one, several ethical considerations were taken into account to ensure that the study was conducted in an appropriate manner. Following Bryman and Bell (2007), all the research participants were asked to provide full consent to be interviewed and audiotaped. In particular, only two interviewees were reluctant to be taped. Then, the written consent form (attached in *Appendix III*) was provided and reiterated before the interview started. Next, a brief introduction of the research purpose was explained to the participants and they were told they could withdraw at any point during the interview, if they felt uncomfortable about continuing. In addition, the confidentiality of the research data is of paramount importance. The research participants were fully informed that the full research data would only be accessible to the researcher, his supervisors, and examiners. Further, they were told that the names of the companies involved would be anonymised, any part of this study were to be published. Moreover, since dyadic perceptions of the buyer and the supplier were intended to be collected, no leakage of confidential data from one party to another was ensured. Last, the protection of the participants' anonymity was guaranteed by excluding their names from the thesis.

CHAPTER SUMMARY

This chapter has discussed the philosophical stance of the researcher, critical realism, pertaining to the world view of the inherent nature of reality and knowledge. Then, the justification for descriptive and explanatory research, abductive research, and the case study method, was provided in keeping with the critical realism philosophy and the research questions. There was also an explanation of the process and longitudinal nature of the case study. Following that, the data collection methods, including semi-structured interviews and secondary documents, were delineated. Then, the data analysis procedures with respect to within-case and cross-case analysis were explained. Last, there was a discussion on the means adopted to enhance research rigour, including validity and reliability. The following chapter delivers the within-case analysis.

CHAPTER FOUR: WITHIN-CASE ANALYSIS

INTRODUCTION TO THE CHAPTER

The within-case analysis section describes the dynamics of competence and goodwill trust across each of the four episodes of trust violation and repair. It begins with a case background, which presents company information about the buyer and the supplier, portraying the nature of the buyer-supplier relationship. Then, an overview of the case dynamics is delineated with a timeline of critical events as well as its descriptions in a corresponding case. After that, the results of the within-case analysis are illustrated in relation to six temporal dimensions respectively, with key terms being adopted (*Table 4-1*).







Temporal dimension	Illustration	Specification
<i>The pre-transgression stage ($t_0 - t_1$)</i>		The characteristics of the buyer-supplier relationship prior to the initial transgression.
<i>The negative turning point (t_1)</i>		The description of the initial transgression.
<i>The trust violation stage ($t_1 - t_2$)</i>		The effect of the initial and subsequent transgressions on trust that deteriorates from the pre-transgression to the lowest level (viz. a <i>deadlock</i>). The term, <i>reparative attempt</i> , is used to describe the responses that the buyer and the supplier adopt (yet ineffective) over the trust violation stage.
<i>The positive turning point (t_2)</i>		The description of the deadlock and the point where reparative responses are initiated by the buyer or the supplier.
<i>The trust repair stage ($t_2 - t_3$)</i>		The effect of reparative responses enacted by the buyer and the supplier on trust that rebounds from the lowest to the post-repair level.
<i>The post-repair stage (t_3 onwards)</i>		The outcome of trust repair after a series of reparative responses implemented (viz. <i>reparative effort</i>) over the trust repair stage, determined by the buyer as the level of trust reaches an equilibrium.

Table 4 - 1. A graphical illustration of the different temporal dimensions

4.1 CASE 1: BUYER (GN) – SUPPLIER (GT)

4.1.1 Case background

Buyer: Global Navigation

The Global Navigation (GN hereafter), established in 1990, offers global positioning system (GPS) navigation, wireless devices and applications. It is listed in the NASDAQ 100 Index, with over \$3.5 billion in revenue generated in 2016 and has 10,000 employees worldwide (Markets.ft.com, accessed in 2018). GN's product categories involve personal navigation, outdoor, fitness, marine, aviation, and automotive OEM devices, for which GN is the market leader in the first five categories. The aviation and marine equipment are developed and manufactured in the US, while the others are jointly designed by American and Taiwanese subsidiaries, being manufactured in the latter. In fact, despite GN's headquarters being located in the US, over 90% of GN's product offerings are manufactured in Taiwan (GN Company Website, accessed in 2018).

Since 2008, growth in the personal navigation device market has stagnated due to the increasing popularity of smartphones. This greatly affected GN's revenue, which reduced from approximately \$4 billion in 2008 down to \$2.8 billion in 2010. At that time, GN decided to diversify its market portfolio by shifting towards the auto OEM market (Digitimes.com accessed in 2018). The supplier of Case 1, Giga Tech, was introduced in 2011 during the transformation process.

Supplier: Giga Tech

Giga Tech Co. Ltd (GT), established in 2000, is a Taiwan-based company that offers customised solutions of design, processing, and manufacturing for mechanical components, automated equipment, plastics machinery, etc. GT is a world-leading provider of hygrometers, thermometers, panels, controllers, and AI modules for electronic appliances (e.g. fridges and air conditioners) (GT Company Website). It has over 250 employees. GT is GN's subcontractor responsible for metal stamping components for auto OEMs, with the product being highly customised to accommodate different automotive models.

Before elaborating upon the details of each of the temporal dimensions from the case, firstly, an overview is presented that serves as a snapshot of what happened (including

transgressions and reparative responses) between the dyad across the entire trust repair process, which helps the reader to become familiar with the case.

4.1.2 Overview of the case

This subsection provides an overview of the dynamics between competence and goodwill trust in the trust violation and repair stages. The graphical illustration (*Figure 4-1*) demonstrates how the two trust dimensions changed over time. Specifically, the colour (high: green; medium: yellow; low: red) indicates the relative magnitude of trust across the four cases. Competence and goodwill trust varied with corresponding transgressions and reparative responses. These critical incidents and responses are delineated on a processual timeline, which addresses their locus and actions, as induced by GT (supplier) and GN (buyer). The illustration also provides descriptions of each trust-sensitive incident.

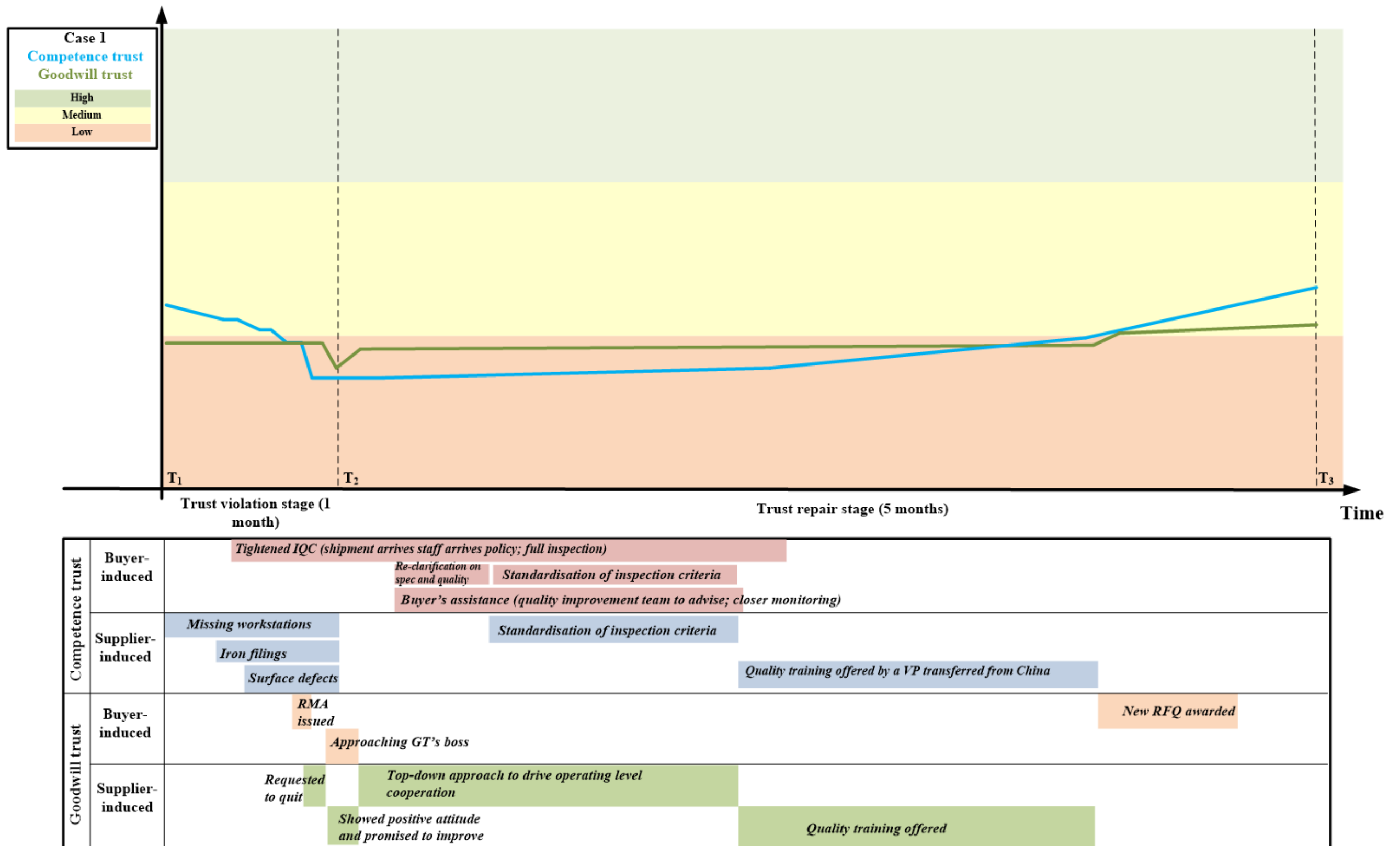


Figure 4 - 1. A graphical illustration of the complete episodes of the trust repair process for case 1 (buyer's perspective)



4.1.3 The pre-transgression stage

This subsection describes the relationship characteristics between GT and GN prior to the trust violation (Table 4-2). GN's perceived relationship dependence was moderate to high, despite the significant imbalance of the company size of the buyer and the supplier, 12,000 and 130 employees, respectively. GN responded that *"there are still second sources out there, but it may incur some additional efforts and resources"* (Purchasing Manager, buyer, case 1), however, it was constantly under time pressure induced by their downstream automotive customers. Thus, GN was expected to operate *"within a tight time frame to deliver the product to their downstream customers"* (Purchasing Manager, buyer, case 1). Besides the pressure from downstream customers, GN suffered somewhat from high structural commitment, because *"this tooling was quite expensive to make (at the buyer's expense) and it would begin to pay off after nearly a year"* (General Manager, supplier, case 1).

On the other hand, since *"GN had just started developing automotive OEMs [...] still in the burgeoning stage of R&D"* (Project Manager, buyer, case 1), not only was the product unfamiliar to both firms, but also, the volume was relatively small and unstable. According to GT, *"[GN's] order was not huge in terms of volume [...] over 2,000 stamping components on a monthly basis"* (Sales Manager, supplier, case 1) and *"GN's orders only accounted for about 1/10 of our overall volume"* (General Manager, supplier, case 1). Furthermore, prior to the dyad being formed, among GN's approved vendors, only GT was willing to submit a request for a quotation due to the inherent uncertainty and economic unattractiveness associated with the product at the time.

The inter-organisational relationship was characterised by moderate competence trust, as perceived by GN: *"[the auditing report] suggested that GT's competence was higher than our expectation. [...] we were not very mature on the design, because this product was still in the development phase. [...] GT did have some experience in the product design that we could rely on"* (Director of Supplier Management, buyer, case 1). Moderate competence trust refers to the notion of swift trust, which indicates the level of sufficient trustworthiness about the supplier's competence before engaging in business collaboration. In this case, the buyer gauged the supplier's competence shortly after an extensive audit was conducted.

Conversely, GN placed low goodwill trust on GT due to the lack of a prior engagement. GN perceived that *"in the beginning when we just started working with them, the level of [goodwill] trust was not too high"* (Director of Supplier Management, buyer, case 1). It

indicates that the dyad was predominantly based on the capability of the supplier, with limited relational embeddedness, as they had been collaborating for under six months.

Relationship characteristics			Quotes
Relationship dependence	Relationship investment	Moderate to low	<i>“It is not like we could replace any supplier at any time. The first constraint was about the auditing [required time]. The second reason was that we had already made a lot of tooling in GT’s factory. It simply would not be enough time to immediately approve another supplier to take over”</i> (Director of Supplier Management, buyer, case 1)
	Quantity/quality of alternatives	Moderate	<i>“[...] it is not so easy to cultivate an alternative supplier, because our products do have some unique attributes”</i> (Purchasing Manager, buyer, case 1)
	Structural commitment	Moderate to high	<i>“After the contract was signed, tooling was built. This is GN’s property since they are customised items that are only applicable to our products. Other firms cannot use them”</i> (Director of Supplier Management, buyer, case 1)
Competence trust		Moderate	<i>“As a GN’s supplier, it requires passing the survey and certification conducted by us, initially. If the supplier has passed the survey, we basically believe that the supplier is qualified to manufacture for us”</i> (Project Manager, buyer, case 1)
Goodwill trust		Low	<i>“We were unfamiliar with this company in terms of how they conducted business and their attitudes towards partners as well as members within the company”</i> (Director of Supplier Management, buyer, case 1)
Prior relationship		Nearly six months	

Table 4 - 2. Relationship characteristics in case 1 (t₀ - t₁)

In addition to the low perceived goodwill trust, *“[...] at that time we [GN] had just started developing the automotive OEM, still in the burgeoning stage of R&D [...] asked the supplier [GT] to jointly design with us”* (Project Manager, buyer, case 1). The buyer and supplier had experienced a period of constant adaption with respect to operational and technical aspects due to the product’s inherently high customisation and precision. GN demanded and expected GT to be cooperative and flexible in terms of product specifications, delivery terms and conditions. However, *“[GT] felt that GN had been continuously giving*

orders and throwing up new requirements” (General Manager, supplier, case 1), which foreshadowed conflict over operations.



4.1.4. The characteristics of the negative turning point

This section describes the initial transgression that set off the process of trust violation, which is known as a negative turning point. It began when GT had not consistently and completely manufactured the metal stamping components for all the required workstations in the manufacturing process before delivering to GN, such that *“products GT delivered tended to lack some workstations, especially tapping”* (Director of Supplier Management, buyer, case 1). Besides, this transgression was not a one-off phenomenon, for it tended to occur repetitively (referring to a stable cause of a transgression).

This transgression had caused disruptions to the buyer not only because it posed certain difficulties to its quality inspection, as *“[missing tappings] were actually not easy to spot from a distance”* (Project Manager, buyer, case 1), but also, because it disturbed the buyer’s production line and caused failures and suspensions after assembling different modules on the metal stamping components. The disruptions with respect to quality control (incoming (IQC), in-process (IPQC), and outgoing (OQC)) and the assembly lines resulted in an increase in the buyer’s costs and resources. The transgression was perceived to be of the operating level and not very severe, because the buyer was able to contain the transgression completely through its IQC and OQC. The buyer *“found a defective item and returned the whole batch [...] did not affect downstream customers”* (Project Manager, buyer, case 1).

Whilst the incident was not severe, it did cast a *“certain doubt [...] on their process management and quality control”* (Director of Supplier Management, buyer, case 1). This perceptual change reflected that GN’s perceived risk on GT’s ability to fulfil its requirements had heightened. In response, GN had shifted from sampling inspection to full inspection of incoming deliveries, emphasising a *“zero defect return policy; and “delivery-arrives-with-staff policy”, with the convenience of sorting”* (Director of Supplier Management, buyer, case 1). Initially, once GN found *“one defective item, the whole lot would be sent back to GT’s factory for further reworking”* (Director of Supplier Management, buyer, case 1). As GN’s doubt regarding GT’s competence increased, a ‘delivery-arrives-staff-arrives policy’ was conducted, which indicates that the former was demanding that the latter’s field application engineers

(FAEs) or quality assurance personnel (QA) come with the batch delivery to its factory. If there were any defective item discovered by IQC, these FAEs and/or QAs had to implement on-site sorting.

All in all, the negative turning point triggered by the transgression, incomplete workstations, was an internal locus and competence-based violation, as the buyer perceived that the supplier “*had great technical know-how [in R&D and manufacturing]*”, just needing to be more attentive to quality control (Table 4-3). Initially, the buyer believed that “*many process management tools could be deployed to eliminate incomplete workstations*” (Director of Supplier Management, buyer, case 1). This means that the buyer perceived that through more effective implementation of quality control on the supplier’s production line by GT’s operating staff, the incident could be minimised. However, the incident had reoccurred frequently since no preventive responses had been incorporated. Thus, the transgression was deemed as being a stable cause, which then led to more frequent and detailed inspection and a stricter return policy enacted by the buyer. Despite frequent occurrences, it did not seriously affect GN’s production, because “*the volume was not very big [...] did not arrange JIT production*” (Director of Supplier Management, buyer, case 1).

Violation characteristics		Descriptions
Locus	Internal	The issue occurred within the dyad.
Controllability	High	The event was within full control of GT.
Stability	High	The event was perceived to be recurrent in nature.
Severity	Low	The defective items were discovered and returned, so this did not affect GN’s production lines.
Type	Competence-based	Missing workstations were caused by a lack of capability in the manufacturing process and quality control.
Hierarchy	Operating level	The event was inherently caused by an operating level dysfunction.

Table 4 - 3. Characteristics of the transgression

4.1.5 Trust violation stage



This subsection describes how competence and goodwill trust were violated following the negative turning point. Multiple transgressions occurred across this stage and this section examines the multiplicative effect of these on violating trust (rather than specifying the details of each incident) (*Table 4-4*). The trust violation stage, which had lasted for one month, began with the violation of competence trust, followed by that of goodwill.

	Initial transgression	Transgression 2	Transgression 3	Transgression 4
<i>Description</i>	Missing tapping in workstations	The remains of iron filings	Surface unevenness, bumping, and scratches	The request to quit
<i>Type</i>	Competence	Competence	Competence	Integrity
<i>Locus</i>	External	External	Internal	Internal
<i>Severity</i>	Low	Low	Low	Low

Table 4 - 4. An overview of the transgressions in the trust violation stage

Competence trust

After the transgression, the frequent occurrence of incomplete workstations, which set off the negative turning point, the buyer's perceived competence trust had begun to decline, as the series of aforementioned preventive responses was implemented (i.e. zero defect and delivery-arrives-staff-arrives policies). Besides incomplete workstations, the buyer had discovered other transgressions in parallel, including excessive iron filings on stamping components and various surface issues, such as unevenness, bumping, and scratches. Despite GT's frequent reparative attempts to contain the issue (e.g. tightened control and operational adjustments conducted after manufacturing with tooling), such manual adjustments inevitably heightened the variation to the production due to quality inconsistency.

As a result of the accumulating transgressions, GN's corporate staff were informed by their operating staff and began to feel "[...] *unhappy and dissatisfied with the quality GT had*

been delivering [...] across different criteria” (Project Manager, buyer, case 1). *“Once multiple minor defects accumulated, GN started to get frustrated”* (General Manager, supplier, case 1). With intensified restrictive approaches being imposed on GT, this had further posed difficulties to its fulfilment of consistent deliveries. Thus, for once, *“they [GT] caused a delay to our production line [...] affecting the delivery to our end customer. We claimed compensation from them according to the hourly based rate of our production line being idle”* (Director of Supplier Management, buyer, case 1). After that, this further violated GN’s perceived competence trust.

Goodwill trust

After GN filed a compensation claim to GT, the latter’s corporate staff felt upset about it, because *“not only did GT not make profits out of GN’s project due to labour intensive recalibrations, but GT also had to pay extra money as a penalty”* (General Manager, supplier, case 1). In response, GT’s sales team filed *“an official letter [...] GT would like to quit”* (Director of Supplier Management, buyer, case 1). At this point, GN perceived that *“[...] GT simply could not just quit arbitrarily like that. We could not simply find another firm to take over the production all of a sudden”* (Project Manager, buyer, case 1). This act was perceived to harm GN’s profit, thereby signalling a violation of their goodwill trust. *“This was actually the straw that broke the camel’s back [...] the point where our trust significantly deteriorated”* (Director of Supplier Management, buyer, case 1). GN reported that *“[at this point] it was probably the time our relationship hit deadlock”* (Director of Supplier Management, buyer, case 1).

It should be noted that, it was the goodwill-transgression that brought the trusting relationship to its lowest point, which was characterised by high tension between the buyer and the supplier stemming from a conflict of interests. Moreover, the transgressions had been gradually moved up from the operating to corporate levels, as GN perceived that *“[...] the quality issues had not converged, but rather, diverged. [...] the problem handling of their staff was questionable. [...] we then escalated the matter to their executive level”* (Director of Supplier Management, buyer, case 1).

The following subsection identifies some factors affecting the process of trust violation from case 1, including 1) domain specificity, 2) permanent solution unavailable, 3) lack of

communication, and 4) perceptual gap between the dyad regarding technical and delivery requirements.

Domain specificity

The supplier-induced transgressions were perceived to fall within a single domain, which is the supplier's quality control, while other domains within the competence dimension seemed to buffer the erosion of trust. That is, the buyer gave credit to the supplier's other capabilities, such as R&D and manufacturing. This attitude counteracted the negative effect of transgressions, as the buyer believed that "*if they [GT] were willing to conduct investment or improvement on these issues [...] they really had got what it takes to manufacture properly*" (Director of Supplier Management, buyer, case 1).

Unavailability of permanent solutions

Whilst GT "*had tried their best to collaborate with GN to achieve their demanded requirements*" in the trust violation stage (Sales Manager, supplier, case 1), these reparative attempts were not effective nor permanent. GT reported that "*[...] it is very difficult to add certain variations of the previously built tooling [...] If we wanted to change this tooling to match their new requirements, probably 90% of the tooling would have had to be rebuilt*" (General Manager, supplier, case 1). Since the issues could not be contained and resolved early in the trust violation stage, they accumulated and over time exacerbated the situation.

A lack of communication

Another factor is that the buyer and the supplier had not communicated and interacted frequently during the trust violation process, especially between corporate level staff. This is because of the relationship being characterised by low goodwill trust. The dyad tended to stick to standard operation procedures (operation-centric) in the early collaboration, reflected in: "*[when we encountered] operational issues reported by GN [...] we simply just kept our nose to the grindstone and tried to fix the issue alone. [...] We should have communicated with GN [...] we did not have to go through many stages to reach the person or division we needed*"

(General Manager, supplier, case 1). This inefficient communication seemed to pose some difficulties for the dyad in reaching early solutions and thus, alleviate relationship tension.

Ambiguities associated with technical and delivery requirements

A specific factor residing in this case is the “gap [between the buyer and the supplier] with respect to the understanding of specs and inspection requirements” (Director of Supplier Management, buyer, case 1). At the outset of the collaboration, such misunderstanding was not profound, but the gap had begun to emerge over time “when MP had carried out [...] with increasing volume [...] GT found that the requirements of GN’s R&D were not exactly the same as we [GT] first agreed and negotiated [with the presence of such discrepancies]. GT had to collaborate, with extra effort, with GN’s production lines that required significant operational adjustments” (Sales Manager, buyer, case 1). As a result, “this was a huge burden to GT as they perceived that GN did not clarify the situation regarding that before sending their products back” (Director of Supplier Management, buyer, case 1). That is to say, ambiguous technical requirements with unclear return policies set off a negative spiral that accelerated the trust violation process.

Heightened conflict of interests

From case 1, it is clearly evident that a conflict of interests in the dyad had gradually exacerbated, which brought the relationship into deadlock. From GT’s perspective, “[despite extensive adjustments and additional resources spent on manufacturing capacity and human resources], we did not add any more costs to GN’s total manufacturing expenses [...] GN’s constant addition of requirements [...] these should have been reflected in their costs. Yet we did not request any increase of costs to GN” (General Manager, supplier, case 1). In fact, “they [GT] felt that other customers were easier and less strict than us, perceiving it as being very difficult to do business with us” (Director of Supplier Management, buyer, case 1). In addition, along with the trust violation process, stricter policies had been promulgated to punish quality failures. This had further undermined GT’s interests due to additional requirements and increased costs, not to mention the compensation claim from GN. As a result, such an unbearable cost burden served as the last straw that broke the camel’s back.

4.1.6 The characteristics of the positive turning point



The positive turning point occurs when one or both parties initiate reparative responses actively to repair violated trust. In order to comprehend the characteristics of this turning point, the transition from deadlock, where trust is at the lowest with intensified conflict of interests to the point where the buyer and/or the supplier is willing to move on and repair violated trust, should be unpacked.

In this transition period, since there had been a lack of communication between the dyad due to low goodwill trust, this provided a certain distance for both parties to reflect on the violation. GN admitted that they shared some responsibility for the violation: “[GN] *started to realise that maybe there were some communication issues [...] why a once competent supplier would choose to quit all of a sudden, because of our returns policy and additional quality requirements*” (Director of Supplier Management, buyer, case 1). In addition to the perceived guilt, the dependent relationship structure also drove GN to resolve the issue quickly, not only because of the pressure from downstream customers, but also, owing to the limited alternatives available. In fact, there were “[...] *some stamping component suppliers out there, but they would not invest many resources on this project [...] other issues might also occur with new suppliers [...]*” (Project Manager, buyer, case 1). Thus, “*it is not easy [for GN] to develop a [new] competent supplier*” (Director of Supplier Management, buyer, case 1). These statements indicate a mix of guilt and concerns about relationship dependence, which provided a certain impetus that drove GN to re-approach GT. Thus, GN sent their director of supplier management to clarify the situation and to engage in a final conversation with its boss.

In contrast, GT also engaged in a rational cost-benefit process. Whilst they thought they had been exploited by the buyer, they also admitted that “*considering the phase-in period [...] the both parties did share some responsibility. I cannot deny it*” (General Manager, supplier, case 1). GT’s management revisited the prospect of GN during the transition period: “*we think GN has the potential. [...] people and other companies like them [...] a very positive company*” (General Manager, supplier, case 1). This perceptual reorientation shaped GT’s intention as it reinforced the belief that “[...] *as a subcontractor, can you say no to that? If you wanted to do so, you simply had to spend more resources on fixing the issue*” (General Manager, supplier, case 1).

4.1.7 The trust repair phase



This subsection describes the dynamics of how competence and goodwill trust were repaired over time following the positive turning point. The trust repair process lasted five months in case 1. Initially, both parties revisited their cost-and-benefit analysis in the period of the positive turning point, which translated into the motivation to repair the relationship. GN initiated the contact with GT in an attempt to “[...] clarify GT’s [continuity] intentions and to discuss issues they had discovered from their QC audit report” (Director of Supplier Management, buyer, case 1). GN discovered that GT’s request to quit “[...] was actually not instructed by GT’s boss, but an emotional response from their sales team. [...] they believed that the project with GN would continue to drain a lot of money and resources. [...] let’s just quit” (Director of Supplier Management, buyer, case 1). Hence, GN directly asked about GT’s expectation regarding future business: “General manager Lin, what attitude do you have towards GN after all? Do you feel that GN is indispensable to you or do you value us very much? If you don’t place importance on our company’s orders, we shall depart as early as possible” (Director of Supplier Management, buyer, case 1).

In the conversation, GN encouraged GT to keep trying (possibly due to their dependence structure): “We still had hope in you [...] if you hung in there and tried harder, even if the improvement might not have been perfect initially, you might probably achieve 70 or 80 [...] you still got the opportunity” (Project Manager, buyer, case 1). Because the transgressions were considered to be domain specific ones, GN still perceived GT as possessing the core technical capabilities with a lack of corresponding supporting ones. GN also urged GT to demonstrate some initiatives by “facilitating the cooperativeness of GT’s operating staff to fulfil GN’s requirements” and also encouraged GT “to raise any unreasonable requirements any time” (Director of Supplier Management, buyer, case 1).

In response, “GT’s boss demonstrated a very active and positive attitude unlike their operating staff [...] stated that GN was our important customer” (Director of Supplier Management, buyer, case 1). GT also agreed to pay the compensation resulting from the last return merchandise authorisation (RMA) through account receivable. Its boss promised to relieve the internal tension and implement improvement actions via a top-down approach, because “[...] operating staff always need to be pushed by their corporate staff” (Director of Supplier Management, buyer, case 1). At this point, GN’s perceived goodwill had somewhat

been repaired, whereby mutual intentions towards future collaboration had been realigned. Also, GN asked GT to develop an improvement schedule, so that it could audit its operations and processes accordingly.

Then, the realignment of expectations, manifested itself in the form of somewhat repaired goodwill trust, paving the way for the following trust repair with respect to specific operational arrangements, as *“the resolution of this cognitive discrepancy could somewhat facilitate the following task-specific recovery”* (Project Manager, buyer, case 1). After corporate staff in the dyad set the tone for the upcoming tasks for repairing trust, more frequent communication and collaboration between operating staff across functional and organisational boundaries was established. The two firms started to discuss how *“GT could prevent quality issues through improving control of raw materials, manufacturing, packaging and delivery”* (Director of Supplier Management, buyer, case 1).

The first thing the dyad conducted was to sort out GN’s production line idleness to restore its manufacturing for its downstream customers. In parallel, GN helped GT to implement improvements by elaborating upon terms and conditions in relation to quality requirements specified on the contract to eliminate any ambiguities along with *“[...] sending a quality improvement team to offer on-site advice [...] to help them discover potential negligence or unaware practices”* that caused quality issues (Project Manager, buyer, case 1).

With the help of improved communication and an involved buyer, this facilitated the implementation of the agreed tasks, which started to work towards eliminating the causes of the transgressions experienced in the trust violation stage. This means that, both parties had strived to reach permanent solutions. First, in order to ensure the consistency of quality inspection, the inspection gauge against which GT’s products was examined had been standardised in concert with GN’s compromises. Second, GT had attempted to modify the tooling as much as possible to comply with GN’s quality requirements. However, because *“it is too difficult to apply large variations to the previously built tooling [...] If we wanted to make this tooling fully compliant to GN’s new requirements [...] probably 90% of the tooling had to be remade”* (Sales Manager, supplier, case 1), GT still had to *“[...] conduct manual recalibration for items with unamendable tooling”* to meet the buyer’s specifications (General Manager, supplier, case 1). Then, GT had also tightened their QA and OQC simultaneously, by *“[...] adopting full inspection to the finished product to ensure that no iron filings and other defects were present”* (Sales Manager, supplier, case 1).

These initial reparative responses had moderately repaired GN's competence trust, as *"GT had reflected upon its practices and capabilities to some extent and demonstrated satisfactory outcomes [...] during the middle of the repair process, we had started to accept [their batches] gradually [...] GT's perceived competence had been recalibrated upwards"* (Director of Supplier Management, buyer, case 1). However, despite the effort of GT, GN still perceived that *"they could only achieve so much in terms of the quality standard based on the technical capability of GT's Taiwanese factory [...] the quality had reached a threshold"* (Director of Supplier Management, buyer, case 1). GT had *"[...] utilised a lot of resources (e.g. human, delivery, and materials) to fix the issues and recover the relationship"* (General Manager, supplier, case 1), but the quality could not be further improved to match GN's expectation.

In order to overcome this threshold, GT decided to transfer its VP from their manufacturing plant in China back to Taiwan for three months to provide intensive quality training and refine the manufacturing process, as *"GT's plants in China did very well in terms of systematic quality control"* (Director of Supplier Management, buyer, case 1). Consequently, *"the training session did go well as it reflected on the quality of products GT delivered"* (Director of Supplier Management, buyer, case 1). The quality of GT's products increased significantly and then stabilised after two months. Accordingly, full inspection carried out by GN's IQC was cancelled after 10 consecutive satisfactory deliveries and so, GT was removed from their watch list.

GN's competence trust in GT had been repaired over time, in that *"[...] we would review suppliers' IQC performance, production control, process control, engineer capability, and management capability [...] to determine their competence [...] after their reparative attempts, if the supplier could reach the score above the pre-set level of competence. Trust [competence] is not unrecoverable"* (Purchasing Manager, buyer, case 1). By the time that GN's quarterly report was conducted, GT yielded good results for quality, cost, and service. That is, *"GT had successfully improved its competence"* (Director of Supplier Management, buyer, case 1).

The successful competence trust repair had engendered the repair of goodwill trust, because GT exceeded GN's expectations in their reparative efforts and also demonstrated their ability to deliver proactive scaling. This meant that, GT's perceived goodwill was positively recalibrated, because GN would appear to have expected that it could not pass the threshold. The competence threshold perceived by the buyer was overcome, because GT transferred its

VP to implement a *“large-scale quality overhaul in its factory in Taiwan [exceeding GN’s expectation]”*. Moreover, this act was perceived to repair goodwill trust as well because it signalled *“[...] sincerity, determination, willingness to go the extra mile in the collaboration with GN”* (Director of Supplier Management, buyer, case 1). Moreover, this act was also perceived as evidence of proactive scaling, which GN valued significantly: *“we might not trust suppliers lacking flexibility and continuous improvement, because they could not continue to grow with us and adapt with our requirements in the future”* (Purchasing Manager, buyer, case 1).

Moreover, GT’s continuous quality improvement had caused GN to *“[...] award GT some new projects”* (Director of Supplier Management, buyer, case 1) not only because its automotive OEMs yielded satisfactory market penetration, but also, because GN perceived that *“GT was currently performing well [...] had undergone a lot of improvement”* (Director of Supplier Management, buyer, case 1). Such success in the market led to an increased investment in both instrumental and emotional resources. As a result, GN felt that *“the relationship [goodwill trust] actually became better than in the pre-transgression stage”* (Director of Supplier Management, buyer, case 1).

To summarise, the relational buffer established between corporate staff in the dyad initiated the repair of goodwill trust after the deadlock. The increased goodwill trust, manifested in the form of realigned expectations, then facilitated the arrangements of operational tasks. Following that, both firms minimised ambiguities in future collaboration, such as the reiteration of quality requirements and the unification of inspection tools in an attempt to eliminate the causes of the transgressions. Then, competence trust was gradually recovered, because of the effective implementation of the prespecified arrangements. In the presence of a quality threshold, GT was able to surmount this by transferring its overseas VP back for quality training and improving the manufacturing process, which also proved its ability for proactive scaling. Not only did the reparative responses adopted by the supplier exceed the buyer’s expectation, for it also led to favourable market performance. As a result, the reparative effort not only repaired GN’s competence trust, but also, elevated its goodwill trust.

4.1.8 The post-repair stage



This subsection compares the level of trust in the post-repair and the pre-transgression stage, which determines the outcome of the trust repair process.

Competence trust: upward recalibration

After the process of trust repair, GN actually placed higher competence trust in GT as “[the repair] had reinforced our belief that this firm did not only view us as a dispensable client, but they also attached great importance to their own improvement” (Project Manager, buyer, case 1). Likewise, the director of the supplier management from GN stated that “GT had undertaken a large-scale overhaul including the manufacturing process and quality management [...] the competence trust was higher in the post-repair stage”. The repair had lowered the risk for the future collaboration in that “GN thought the following collaboration would be smooth without any problems” (Project Manager, buyer, case 1).

Goodwill trust: upward recalibration

With respect to goodwill trust, GN perceived that “goodwill trust had definitely increased in the post-repair stage, because we did not place much goodwill in GT in the beginning” (Director of Supplier Management, buyer, case 1). Apart from the level of prior goodwill, GN “had not only affirmed GT’s competence, but GN had also witnessed GT’s faith and sincerity invested in the relationship” (Director of Supplier Management, buyer, case 1).

In sum, after five months of reparative efforts, GN’s competence trust in GT had been repaired to a higher level compared to the pre-transgression stage. Likewise, GN’s goodwill trust had been repaired to a level that was higher than in the pre-transgression stage. The improved perceived competence and goodwill trust of GN had led to GT receiving new projects. However, the latter had become more vigilant and selective in terms of taking GN’s projects, whereby they only accepted orders when GN allowed them to become involved in the early stages, i.e. with the assembly design and quality setting.

4.2 CASE 2: BUYER (HE) – SUPPLIER (IE)

4.2.1 Case background

Buyer: HiTech Electronics Corporation

HiTech Electronics Corporation (HE hereafter), founded in 1985, is a Taiwan-based company that specialises in manufacturing standard, modified, and customised power supplies. It has two ISO9001 manufacturing plants, headquarters in Kaohsiung, Taiwan and a mass production centre in China. HE manufactures for a range of products including switchers, adaptors, PCB mount modules, compact peripheral component interconnect, and so on. It currently has 200 employees (HE Company Website, accessed in 2018).

Supplier: Integral Electronic Inc.

Integral Electronic Inc. (IE hereafter), established in 1990, is a Taiwan-based company that specialises in manufacturing high-end PCBs and offers entire integration from electrical specifications to production. IE provides a range of PCB products with various layers, functions, and materials. The quality standards of IE comply with ISO 9001, TS16949, and UL94V. It currently has 120 employees that generate a monthly capacity of over 28,000 square metres of PCB (IE Company Website accessed in 2018).

4.2.2 Overview of the case

This subsection provides an overview of the dynamics between competence and goodwill trust in the trust violation and repair stages (*Figure 4-2*).

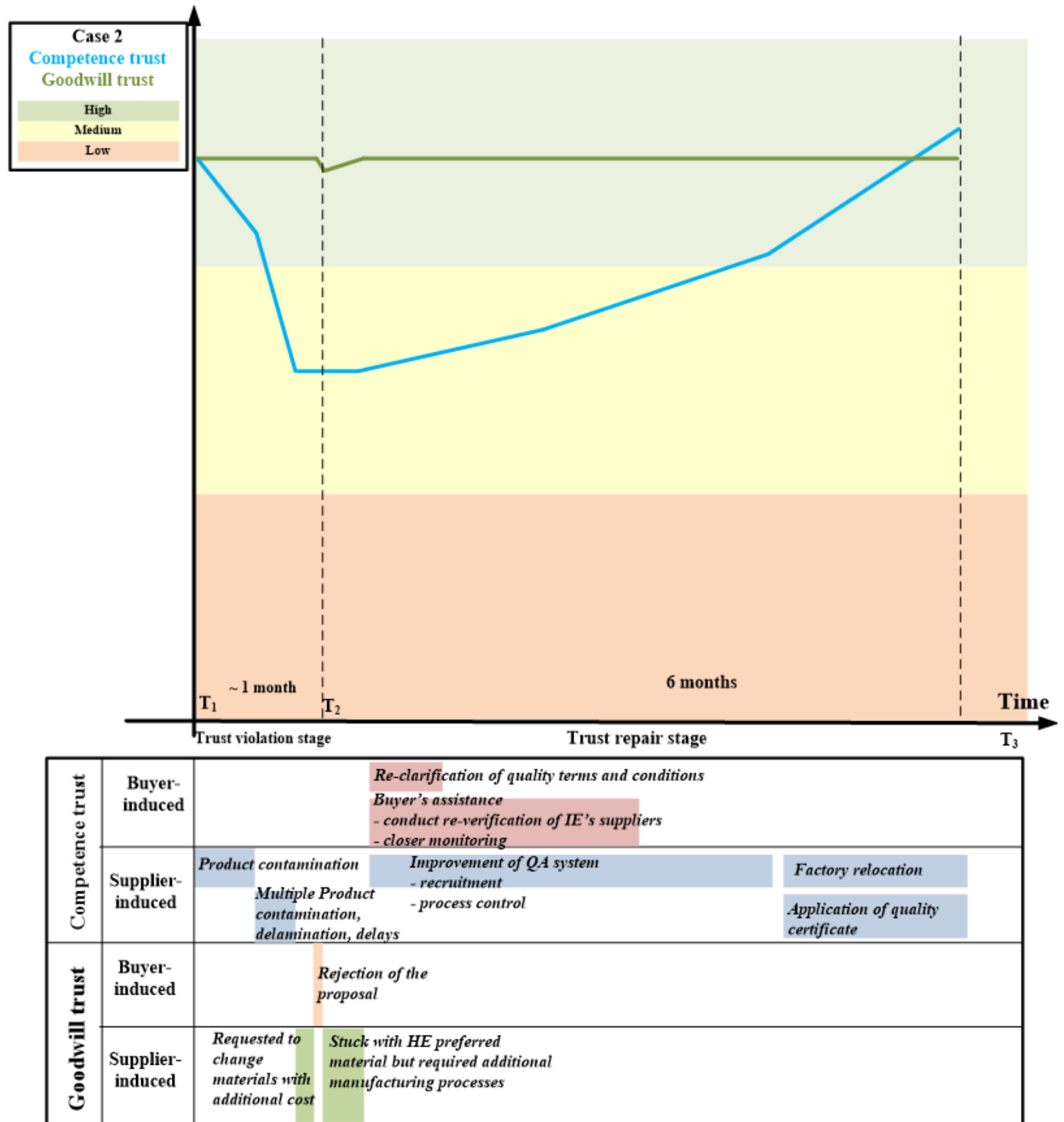


Figure 4 - 2. A graphical illustration of the complete episodes of the trust repair process for case 2 (buyer's perspective)

4.2.3 The pre-transgression stage



The subsection describes the relationship characteristics between IE and HE prior to the trust violation (Table 4-5). HE's perceived relationship dependence was moderate. Whilst its orders *"[...] accounted for over 40 - 50% of IE's total sales"* and *"HE had many models and corresponding tooling in our factory"* (Senior Purchasing Manager, buyer, case 2), it was not very difficult to replace IE, because *"this [PCB] is a mature industry and no supplier is irreplaceable as long as tooling is available [...] only accompanied by some operational hassles"* (Senior Purchasing Manager, buyer, case 2). Therefore, IE depended on HE significantly more than the other way around, thus creating unilateral dependence. The dyad relied on an invoice system in which *"an invoice is our contract"* that *"[...] contains a unit price, delivery date, and quality standards"* (Senior Purchasing Manager, buyer, case 2).

HE perceived high competence trust in IE as it had consistently fulfilled HE's expectations over 10 years. Prior to the trust violation, HE *"[...] trusted IE's ability and we actually visited their factory and conducted an audit of their manufacturing capacity to ensure that their manufacturing process was compliant with ROHS"* (General Manager, buyer, case 2). Additionally, HE also perceived high goodwill trust in IE, as it perceived that IE was concerned with HE's opinions and demonstrated a positive and active problem-solving attitude. The two firms *"[...] had engaged in open discussions with each other when one encountered any operational issues. [...] the relationship was pretty good [as an overall assessment of goodwill]"* (General Manager, buyer, case 2). Over 10 years of collaboration, not only had IE demonstrated a consistent quality, for it had also never engaged in any opportunistic acts. Specifically, IE *"[...] had never stolen our materials. Many PCB manufacturers would steal materials to lower their cost, for this is hard to discover [...] this good and consistent record somewhat indicates good intentions and the genuine care of IE"* (Senior Purchasing Manager, buyer, case 2).

This high perceived goodwill trust stemmed from the long prior relationship. 20 years previously, HE had replaced IE's previous PCB supplier due to a severe technical failure. IE had helped HE overcome this difficult period. At that time, *"IE came to our factory after work for mounting graphs and producing samples for manufacturing. [...] it had taken 3 - 4 months to complete the replacement process successfully"* (Senior Purchasing Manager, buyer, case 2). The perception of goodwill trust was mutually affirmed, as IE also perceived that, *"HE had actually helped us to grow a lot through idea and knowledge exchanges"* and *"they had always been a very positive and active partner to work with in terms of problem-solving"* (General

Manager, supplier, case 2). Hence, the dyad had developed a sense of identification-based trust, which relied on the identification with the other party's intentions. HE and IE "[...] *have regular communication with respect to technology, knowledge and business-related issues*" (General Manager, buyer, case 2). In particular, "*HE would send technical requirements and latest information of products under development, such as wattage and power to IE on a regular basis. So, we would be prepared when these products were ready to mass produce*" (General Manager, supplier, case 2). Thus, IE was on HE's technical roadmap.

Relationship characteristics			Exemplary quote
Relationship dependence	Relationship investment	High	"Almost 20 years ago, we switched the PCB supplier to IE. We have been working with them ever since" (Senior Purchasing Manager, buyer, case 2)
	Quantity/quality of alternatives	Low	"In the early ages, HE actually did account for over 7 - 80% of our total sales" (Account Manager, Supplier, Case 2) "[IE] suffered a bit when one of our largest clients switched orders to another supplier. Orders placed by the client accounted for almost 50% of their total sales" (Senior Purchasing Manager, buyer, case 2)
	Structural commitment	High	"[HE] had many models and corresponding tooling in our factory, not like a few, they had over hundreds of models with different specifications" (Account Manager, supplier, case 2)
Competence trust		High	"We trusted their competence in PCB manufacturing pretty much" (Senior Purchasing Manager, buyer, case 2)
Goodwill trust		High	"The cooperation was good in general. We would engage in open discussions with each other, if one encountered any operational issues. The relationship [back then] was pretty good" (General Manager, buyer, case 2)
Prior relationship		10 years	

Table 4 - 5. Relationship characteristics (t₀ - t₁)



4.2.4. The characteristics of the negative turning point

The initial transgression that triggered the negative turning point was product contamination on printed circuit boards (PCBs) manufactured by IE. This broke out after the introduction of the restriction of hazardous substances (RoHS) in 2006. This regulation started to be enforced in 2007 when most European and American customers agreed to comply with RoHS due to the pressure from their governments. These customers rigorously demanded their suppliers over the world to do so accordingly. However, during the initial RoHS transition, many, if not all, PCB manufacturers in Taiwan were technically unfamiliar with what this regulation really meant, so many firms encountered difficulties in the manufacturing process. The initial transition was characterised by an ambience of high uncertainty and insecurity.

During the early stage of the RoHS transition, a European customer of HE reported that heavy metal residues had been found in some of the server adapters from their element analysis in their lab. The customer filed a complaint to HE and wanted it to sort the issue out as soon as possible. Even so, the downstream customer in fact “*understood the situation and the cause, as the contamination occurred in the very beginning of RoHS introduction*” (Senior Purchasing Manager, buyer, case 1). HE sought IE’s explanation of the cause of the transgression. IE explained that “[...] *some products were contaminated in the manufacturing process due to material mix-ups*” (Senior Purchasing Manager, buy, case 1). So, IE promised to tighten their quality assurance (QA) through adopting “[...] *a better labelling system to help identification of different product models and machineries*” (Field Application Engineer, supplier, case 2). However, HE doubted the effectiveness of the promised reparative attempts, which were reactive rather than preventive in nature. It should be noted that, at the time, HE did not have the equipment necessary to conduct element analysis. After deliberation, HE purchased this (X-ray fluorescence) to carry out element analysis with IQC and also heightened the inspection criteria.

To summarise, the negative turning point triggered by the initial transgression, product contamination, was of an external locus and low severity, because the downstream customer took on a quite forgiving perspective due to the externally enforced regulation and hence, there were less severe consequences than there could have been (*Table 4-6*). The transgression was a competence-based violation at the operating level, with the full controllability of IE, which was caused by the lack of knowledge about RoHS and loose quality control. The proposed reparative attempts of IE were perceived to be ineffective.

Violation characteristics		Descriptions
<i>Locus</i>	Partially external	The issue had affected the external party, HE's European client.
<i>Severity</i>	Moderate to low	The contaminated items were discovered by HE's downstream customer, but it demonstrated certain tolerance due to it being the early phase of RoHS introduction.
<i>Type</i>	Competence	The event was caused by the lack of a quality control system.
<i>Controllability</i>	High	The event was within the full control of IE.
<i>Stability</i>	High	The event was perceived to be recurrent in nature.
<i>Hierarchy</i>	Operating	The event was inherently caused by an operating level dysfunction.

Table 4 - 6. Characteristics of the transgression



4.2.5 The trust violation stage

This subsection describes the dynamics of the violation of competence and goodwill trust following the negative turning point. There are two transgressions that occurred in this stage (Table 4-7).

	Initial transgression	Transgression 2
<i>Description</i>	Product contamination	Reoccurring by-products of product contamination (PCB delamination and failed deliveries)
<i>Type</i>	Competence	Competence
<i>Locus</i>	External	Internal
<i>Severity</i>	Low	Moderate

Table 4 - 7. An overview of multiple transgressions in trust violation

Competence trust

After the negative turning point, HE's competence trust in IE was undermined, as they "[...] were cautious and concerned about their quality control and ability to comply with RoHS, since at the time RoHS was not completely understood by most PCB manufacturers" (Senior

Purchasing Manager, buyer, case 2). The suspicion was amplified, because HE placed great importance on this downstream customer in terms of strategic value.

It should be noted that *“it was not rare to hear that PCB manufacturers were forced to shut down [...] or engaged in opportunistic acts of dumping non-lead-free products on customers”* (Account Manager, supplier, case 2). This external condition had constrained HE’s option to seek alternatives due to inherently high uncertainty across all PCB suppliers. Instead, they had to rely on IE’s demonstrated competence and, more importantly, goodwill. IE’s established and perceived goodwill, which remained unchanged, had buffered the dyad through the violation process, as HE *“[...] did not think IE would engage in opportunistic behaviour to harm HE”* (Senior Purchasing Manager, buyer, case 2). This belief kept HE sticking with IE and solving RoHS-induced issues with it.

After the initial transgression, HE had not only caught the same transgression, product contamination, in *“[...] over 20% of delivered batches”* over 3 weeks (Account manager, Supplier, Case 2), but it also experienced some cases of *“PCB delamination caused by increasingly complicated manufacturing procedures associated with RoHS”* (General Manager, supplier, case 2). These RoHS-induced disruptions were caused by a lack of understanding of the directive, which not only *“[...] required a complete repurchasing of RoHS-compliant materials from IE’s suppliers and their suppliers”*, but also needed *“[...] adjustments to the parameters and manufacturing process”* (Field Application Engineer, supplier, case 2). The defective items were sent back to IE’s factory for further sorting and reworking to be redelivered as soon as possible. *“[HE] became stricter about quality inspection. [...] sometimes we did not have enough products ready for production”* (General Manager, buyer, case 2). It caused HE to delay their delivery to their important customer in Europe. As a result, it claimed compensation accordingly, for the loss incurred to their production line.

The phenomenon had further violated HE’s competence trust in IE. At this point, *“since HE had never experienced anything like that before [a series of RoHS-induced disruptions], its engineers, QAs, and the senior purchasing manager were cautious about the quality of our products and doubtful about our capability to overcome this”* (General Manager, supplier, case 2). This means that the situation had been exacerbated, because the transgressions had shifted from a quality control issue to deficiency of the supplier management and manufacturing process.

Goodwill trust

IE did not “[...] *dodge the responsibility with the intention of avoiding compensation or cost considerations*” (General Manager, supplier, case 2). They carried out the necessary reworking and came up with the volume agreed in the following delivery. After a while, IE conducted root cause analysis and collected data from its factory and other PCB manufacturers. Then, IE arranged a meeting and explained why the former solutions could not solve the issue permanently and proposed other solutions. It suggested that, “*if we needed to convert to lead-free production permanently, we needed to adopt better materials in manufacturing [...] would result in increased costs*” (General Manager, supplier, case 2). However, this suggestion was turned down by HE.

From HE’s perspective, it was not willing to accept the cost increase associated with the new materials, arguing that “*it had adopted the existing materials for a long time and was reluctant to change*” (General Manager, supplier, case 2). Apart from the concern of technical familiarity, HE was also worried about its cost structure, because such additional cost would very likely be absorbed by it, rather than its downstream customer.

Despite the rejected proposal, IE had still kept open communication with HE, such that “*IE was quite open to any enquiries raised by HE*” (General Manager, supplier, case 2). However, after three meetings between corporate staff from the dyad, no breakthrough regarding the preventive solutions was achieved. At this point, not only had IE’s capability of quality control been called into doubt, but also, its control over “*manufacturing, supplier management, and cost management*” had also been questioned (Senior Purchasing Manager, buyer, case 2), resulting in a goodwill trust violation. IE admitted that “*QC and QA between the buyer and the supplier are always going to be opposed to each other in any organisation. This opposition, which manifested itself in the insistence of standpoints and a reluctance to communicate, had gradually led to an accumulation of time and resources*” (General Manager, supplier, case 2). “*The discussion was concluded with HE providing a list of materials (including CAN1, FR1, and FR4) it wanted IE to stick with [...] IE agreed to carry out further feasibility analysis before answering HE’s inquiry*” (General Manager, supplier, case 2). The relationship had reached a deadlock, because HE had placed a significant emphasis on their cost structure, which IE was perceived to be undermining this.

The following subsections identify some factors affecting the trust violation stage from case 2, including 1) domain specificity, 2) permanent solution unavailable, 3) shadow of the past, and 4) the locus of the cause.

Domain specificity

As the trust violation process progressed, HE had gradually come to doubt IE's capabilities across several domains, including quality control, manufacturing, supplier quality management, and cost management. Such cross-domain failures had exacerbated the violation of competence trust. It should be noted that, the domain specificity had been contained in the early stage of trust violation, which was only reflected in the violation of competence trust. However, it had over time spilled over to HE's goodwill trust, because it originally believed: "*IE had what it took to comply with RoHS*" (Senior Purchasing Manager, buyer, case 2). However, not only did IE fail to contain the early transgressions, but it had also caused new transgressions (cross-domain failures). Thus, HE started to question IE's intentions to solve the transgressions.

Permanent solution unavailable

Similar to case 1, it can be seen that both parties could not reach permanent solutions that effectively eliminated the metal contamination despite IE's active reparative attempts. Moreover, the accumulation of ineffective reparative attempts had not only undermined the buyer's interests (as the deteriorating situation manifested itself in more financial damage and operational challenges), but also impaired the supplier's interests (as its costly effort was not only discounted, but also resulted in incremental losses, such as financial and operational burdens). This conflict of interest was an impetus for the supplier to come up with a proposal with a potential increase in material cost, thus transferring its losses to the buyer.

The locus of the cause

The transgression was perceived to be of a partial external locus by HE and their downstream customer, as RoHS had been enacted by the government and downstream customers. This

perception of external locus had buffered the violation of trust, because both parties tended to possess a forgiving attitude to IE. Initially, *“the downstream customer was willing to forgive and tolerate the quality issue regarding occasional lead residue”* (Senior Purchasing Manager, buyer, case 2). It should be noted that as the trust violation process progressed, the mitigating effect of the locus had gradually worn off, because *“HE and their downstream customer had gradually lost patience”* (Account Manager, supplier, case 2) and the cause was no longer a quality control issue, but a cross-domain one.

The shadow of the past

The shadow of the past seemed to mitigate the negative perceptions associated with the violation, whereby HE perceived that *“we couldn’t just say that we wanted to quit and give up on the supplier, because it is very hard to cultivate a competent supplier, not to mention that we had much tooling in their factory”* (General Manager, buyer, case 2). This contained HE’s intention to switch suppliers and motivated it to overcome RoHS transition with IE in spite of the occurrence of cross-domain failures.

4.2.6 The characteristics of the positive turning point



After the deadlock, both parties still maintained a strong intention for relationship continuity due to the shadow of the past and high relationship dependence. However, the trust violation stimulated a crisis mindset not only because IE relied heavily on HE’s orders (if HE withdrew orders, IE would be very likely to shut down), but also because some of their peer organisations had failed and gone out of business. IE noted that, *“it was quite serious if we kept failing our customers by producing below-standard products [...] it resulted in a cycle of sorting, caution, and compensation [...] together with the stagnating or declining economy in the industry, many firms had no choice but to shut down”* (General Manager, supplier, case 2).

In addition to this, IE seemed to hold a problem-solving orientation, viewing the tension stemming from the trust violation process as a trigger for finding out HE’s real requirements: *“sometimes arguments would lead to a higher mutual understanding as well as self-understanding. We began to understand what our counterpart was really concerned about”* (Field Application Engineer, supplier, case 2). That is, through a series of arguments due to a

conflict of interests, “[IE] found out that the core consideration of HE in their sourcing strategy under RoHS was to ‘limit the direct increase to costs; make up through indirect procedures’” (General Manager, supplier, case 2). Both this crisis mindset and problem-solving attitude motivated IE to repair the violated trust shortly after the deadlock.

4.2.7 The trust repair stage



IE had engaged in continuous communication with HE at both the corporate and operating levels, for which “[IE] responded to every concern and requirement raised by the buyer and offered solutions to fulfil their needs by clearly understanding their needs, communicating, and discussing possible arrangements both parties could make” (General Manager, supplier, case 2). After clearly informing HE regarding its proposed tasks, over the next two weeks, IE had conducted material analysis and performance evaluation with respect to the materials HE had proposed in a meeting. IE explained to HE that FR4 yielded the best performance in terms of stability under lead-free production. However, in order to apply this material successfully to production and at the same time maintain an acceptable cost, IE requested HE “[...] to modify their manufacturing process to accommodate the chosen material [...] to carry out an extra process, baking, [...] which might only lead to some indirect costs” (Field Application Engineer, supplier, case 2). HE was willing to accept the proposed solution as it would rather spend the indirect cost through additional adjustments to the manufacturing process.

A major breakthrough was made by IE’s tailored solution for HE. It put off the major concerns of HE, a potential increase to its cost structure and technical unfamiliarity. As a result, this solution was accepted by HE, because it believed IE was willing to tailor the reparative responses that would accommodate its needs. The two firms had “[...] reached a mutually acceptable solution in a timely manner” (General Manager, supplier, case 2). HE’s goodwill trust had been repaired quickly, because of IE having displayed genuine care about its interests.

Despite corporate arrangements made regarding the material, these required extensive operational collaboration across different domains to implement successfully. IE started to implement the agreed solutions, including material modification plus additional procedures. Consequently, the product contamination had been contained significantly and “[the improvement in product quality] was quite efficient on the whole, initially” (Senior Purchasing

Manager, buyer, case 2). However, during the process, HE was aware of that “[...] *the quality specifications seemed to be rather ambiguous [with respect to IE’s outsourced manufacturing]*” so it assigned its senior purchasing manager on site “[...] *to help and facilitate operational difficulties and argumentation over quality specifications between the two companies’ QA*” (General Manager, buyer, case 2). A joint decision was made on which additional verification should be conducted against IE’s upstream suppliers. The process involved close collaboration between R&D engineers from the two firms “[...] *on getting a bill of materials [BOM] of the individual suppliers certified*” (General Manager, supplier, case 2).

As a result, “*after two months, our [competence] had significantly recovered as defective items decreased significantly*” (Account Manager, supplier, case 2). HE perceived that IE’s competence had increased, because it had gradually reduced the uncertainty associated with future reoccurrence, thus shifting from more reactive solutions to more permanent ones. In particular, with the firms having “[...] *engaged in the repair through this cooperative way, this had actually enhanced the competence of both*” (General Manager, buyer, case 2).

However, since HE had got over hundreds of product categories manufactured by IE, not every model underwent lead-free production simultaneously. The main difficulty faced by IE was that some of HE’s models were still manufactured non-lead-free. This had led to some compromises being made by IE and HE during the transitional stage, whereby they had to delay intentionally some production lines to accommodate lead-free manufacturing and thus, prevent the occurrence of product contamination. Nevertheless, these delays did not hinder the trust repair process, because IE always informed HE, if they “[...] *could not deliver the agreed volume of particular models on the agreed time [...] would contact them in advance so the impact could be minimised*” (Account Manager, supplier, case 2). In addition, HE was willing to “[...] *postpone certain advanced orders that IE was currently unable to fulfil*” (General Manager, buyer, case 2). Thus, HE could better arrange its manufacturing process without much disturbance.

In parallel, IE felt that the quality and speed of information exchange regarding new technologies in the sector did not flow quickly enough to keep up with the pace in the south, Kaohsiung, where it was based, compared to cities in the north. Hence, it decided to relocate its manufacturing centre in the north (Taoyuan), where most hi-tech electronics companies are clustered. This was because economies of agglomeration, human resources, information exchange and knowledge transfer are more rapid in the north among PCB firms. Thus, IE “[...]

built a new factory in Taoyuan [...] expanded the scale by recruiting more engineers in R&D and QA to improve product designs and conduct an audit” (General Manager, supplier, case 2). Not only did IE set up a factory in the north, for this factory also passed the ISO 9001 certification. Both of these were accomplished in the later trust repair stage. It reflected IE’s full commitment in improving its QA system, whereby IE “*[...] has become stricter on OQC, with tighter standards and more quality tests as well as IPQC with more stops [...] started to place more importance on the information and feedback provided by our customers*” (General Manager, supplier, case 2). Apart from the improvement of manufacturing and control processes, RoHS had become a widespread standard over time and “*most of our orders received had become complete lead-free products*” (Account Manager, supplier, case 2). “*It took almost six months to transform fully all HE’s models and machineries to comply with ROHS*” (Field Application Engineer, supplier, case 2). As a result, HE’s competence trust in IE had “*increased gradually over time*”, with more reparative responses being initiated and substantiated (Senior Purchasing Manager, buyer, case 2).

This was the most critical trust violation in the dyad, but it did not trigger much of a negative effect on HE’s goodwill trust, because the shadow of the past seemed to buffer the whole trust violation and repair process, which mitigated any suspicion about IE’s intentions. Without such strong relational ties, HE would have held IE’s goodwill accountable and safeguard potential opportunism induced by the supplier. Additionally, IE’s competence improvement “*[...] has led them to receive many orders from big firms*” (General Manager, buyer, case 2). But due to HE’s purchasing capacity, IE’s improved competence did not result in increased orders or more projects. Thus, “*the relationship dependence has reduced as IE’s total sales have been growing*” (Senior Purchasing Manager, buyer, case 2). This, in fact, caused IE to prioritise its resources towards other firms, thus reducing its responsiveness to HE.

To summarise, over a six-month period, HE’s goodwill trust had been repaired by devising a mutually adaptable reparative response that eliminated its concern regarding a potential increase in cost and technical unfamiliarity. As the core concern was put off, HE had offered assistance to improve IE’s manufacturing process and quality control via on-site monitoring. Corporate involvement led to the discovery that a permanent resolution largely depended on IE’s upstream suppliers. Both firms engaged in a reverification of all IE’s suppliers. In parallel, IE reflected on the violation process, subsequently deciding to relocate its factory and to apply for ISO certification. That is, the reparative responses implemented

were targeted across different domains of competence, beyond RoHS compliance. It had turned into a full-range capability overhaul of the whole company, which further enhanced IE's perceived competence.

4.2.8 The post-repair stage



Competence trust: upward recalibration

After the process of trust repair, HE's perceived "*competence trust [in IE] was actually higher*" than during the pre-transgression stage (Senior Purchasing Manager, buyer, case 2). Given that "*many PCB manufacturers had failed to comply with RoHS*" (Senior Purchasing Manager, buyer, case 2), HE's perception of IE's competence had been reinforced, as "*they had become more important to us*" (General Manager, buyer, case 2). Furthermore, as IE conducted an overhaul across multiple domains, its competence had improved significantly, because a lot of resources had been invested in the reparative efforts guided by the strategic decision.

Goodwill trust: restoration (unchanged)

Since the dyad was essentially identification-based in the pre-transgression stage, goodwill trust was only impaired after a conflict of interests occurred in the later trust violation stage. This meant that, "*despite some ups and downs in the process, our relationship was not very much affected*" (General Manager, buyer, case 2). Similarly, "*it is not only about competence [...] there are still favoured among many alternatives [...] we will always keep IE, especially for our most important customers and their projects, because they will never steal our materials as some of our PCB suppliers have done*" (Senior Purchasing Manager, buyer, case 2). Notably, it is difficult and costly to verify PCBs piece by piece, so HE tended to give the more important projects to IE. This mutually cultivated goodwill trust, evidenced in: "*we share a long history [...] trust, support, and grow from each other [...] a sense of revolutionary feelings between HE and IE*" (Account Manager, supplier, case 2), seems to have been less sensitive than competence trust.

4.3 CASE 3: BUYER (AC) – SUPPLIER (AE)

4.3.1 Case background

Buyer: Alpha Computer

Alpha Computer (AC hereafter), founded in 1980, is a Taiwan-based original equipment manufacturer (OEM) that offers a range of electronic products, including personal computers (PCs), laptops, tablets, smartphones, LCD monitors, plasma TVs, projectors, and peripherals. The company operates in over 160 countries with over 8,000 employees. It yielded an annual revenue of \$10 billion in 2017, which also ranks it in the top five branded PC vendors worldwide in 2018 (IDC). In terms of percentage of sales revenue per product category, laptops account for 60% of the total, followed by PCs, 15%, and monitors, 12% (AC quarterly report, 2018).

Supplier: Advanced Electronics Inc.

Advanced Electronics Inc. (AE hereafter), established in 1985, is a Taiwan-based original design manufacturer (ODM) that produces laptops, tablets, PCs, LCD monitors, LCD TVs, and peripherals. In 2017, laptop and smartphones/tablets accounted for 75% and 18%, respectively, of overall sales revenue, which amounted to over \$24 billion. It is ranked as the world's second-largest laptop manufacturer, with over 50,000 employees and has produced at least 40 million laptops annually since 2010 (AE Company Website, accessed in 2018). AE manufactures for world-class electronics brands, including Dell, HP, Lenovo, Acer, Apple, Sony, Nokia, and Toshiba.

4.3.2 Overview of the case

This subsection provides an overview of the dynamics between competence and goodwill trust in the trust violation and repair stages (*Figure 4-3*).

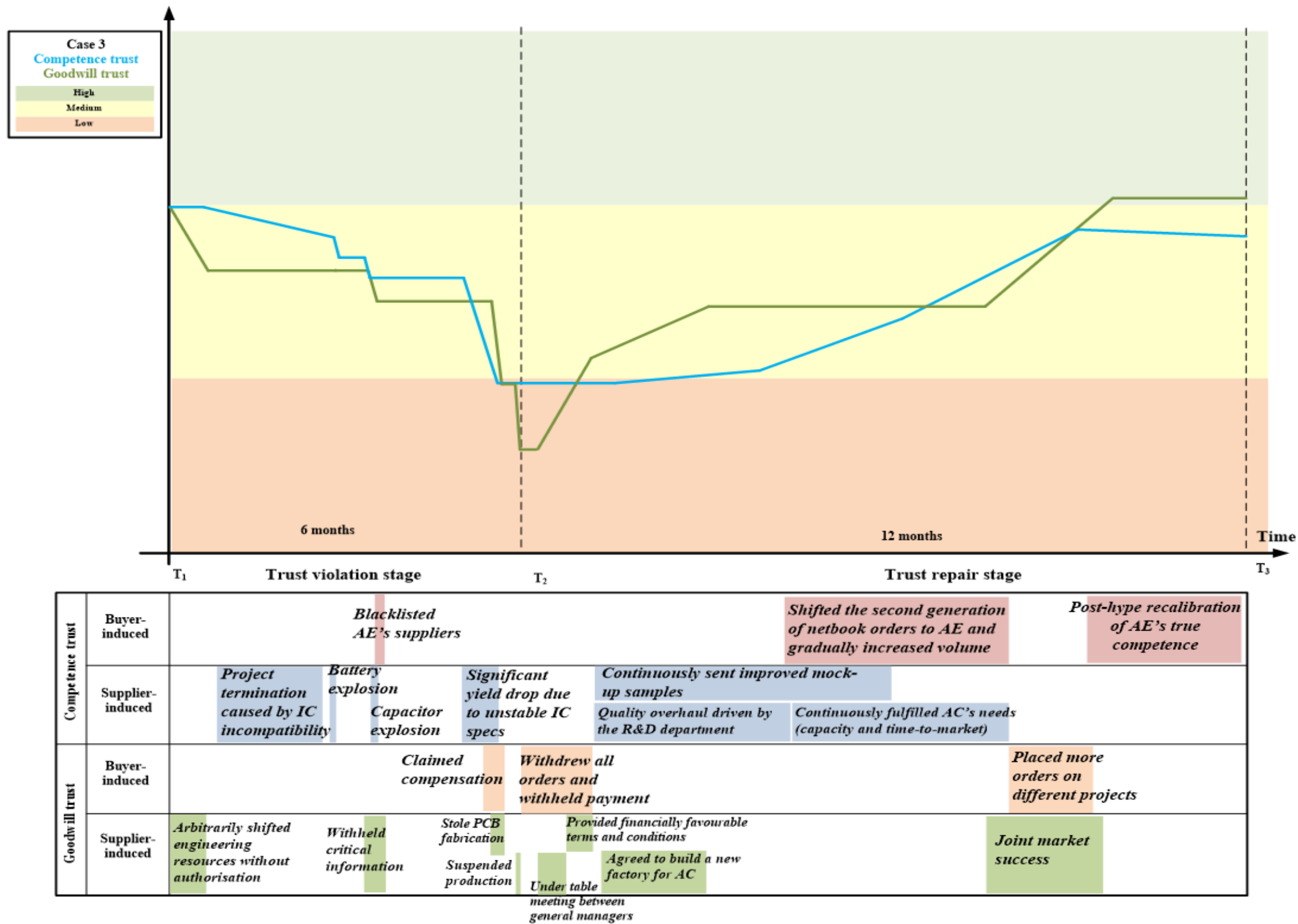


Figure 4 - 3. A graphical illustration of the complete episodes of the trust repair process for case 3 (buyer's perspective)

4.3.3 The pre-transgression phase



This subsection describes the relationship characteristics between AC and AE prior to the trust violation (Table 4-8). The former's perceived relationship dependence was somewhat high, because *"in the pre-transgression stage, AC's number one supplier was Mega Electronics (ME hereafter), followed by AE and Hitron Computer (HC). AE received the second largest orders from AC"* (Executive Vice President, supplier, case 3). Since AC *"[...] normally placed 200k – 300k orders on laptops with AE, on average, per month"* (Senior Purchasing Manager, buyer, case 3), not many suppliers could meet that manufacturing capacity in a calendar month.

In the pre-transgression phase, AC had moderate competence trust in AE, because *"AE primarily offered assembly integration, where AC had to formulate the majority of routes on QC, IQC and OQC, technical improvement, and suggested solutions [...] we needed a lot more effort to work with AE [compared to ME]"* (Vice President, buyer, case 3). Based on the performance assessment report, *"AE's engineering dimension did not turn out to be very satisfactory [as compared with their main competitor]"*. However, another domain of AE's competence, cost-effectiveness, came to the fore: *"[...] AE seemed to be the most supportive regarding the price offerings"* (Senior R&D Engineer, buyer, case 3).

This consideration of cost signals goodwill trust rather than competence trust in the electronics industry, because *"in the Taiwanese electronics industry, OEMs and ODMs are mostly cost-oriented [...] the first key criterion is the intention to cooperate and collaborate [...] if their costs cannot meet our requirements, we will not proceed"* (Vice President, buyer, case 3). Likewise, AE echoed that *"the key of goodwill trust between two firms is essentially centred on cost"* (Senior Project Manager, supplier, case 3). That is, goodwill trust is evaluated based upon how much the supplier is willing to give up on profits, which in turn, translates into the buyer's welfare. Such willingness to forfeit certain profits can be promoted by both the shadow of the future (e.g. expected gains) and past (e.g. long-established relationship). Particularly, in this case, AC had placed a moderate to high goodwill trust in AE, not only because of its competitive price, but also owing to good interpersonal relationships between executive staff. In particular, *"the bosses [from AE and AC] seemed to have a good interpersonal relationship [...] had a great rapport and frequent interaction"* (Senior Project Manager, supplier, case 3). With such high goodwill trust in place, *"[AE] was always granted orders with the largest volume [...] not necessarily indicating more projects"* (Senior R&D Engineer, buyer, case 3), because AC might have felt obliged to order a certain volume from AE in each RFQ to reciprocate the goodwill. Moreover, the business relationship between AC

and AE had begun around 2005 and 2006, which was approximately five years before the violation. During the period of the pre-transgression phase, the two firms “[...] *had not experienced any noticeable conflict*” (Senior Project Manager, supplier, case 3).

Relationship characteristics			Quotes
Relationship dependence	Relationship investment	Moderate to high	<i>“This industry requires a lot of and frequent information/knowledge sharing”</i> (Senior Purchasing Manager, buyer, case 3)
	Quantity/quality of alternatives	Low	<i>“[...] our first choice was Quanta Computer rather than AE, because the capability of Quanta Computer’s factory could actually achieve system integration instead of assembly integration”</i> (Vice President, buyer, case 3)
	Structural commitment	Moderate	-
Competence trust		Moderate	<i>“[...] AE primarily offered assembly integration, which AC had to formulate the majority of routes from QC, IQC and OQC to improvement suggestions [...] we needed a lot more effort to work with AE [compared to Quanta Computer, AE’s main competitor]”</i> (Vice President, buyer, case 3)
Goodwill trust		Moderate to high	<i>“AE did have the best relationship with AC’s executive staff. Therefore, they were always granted with orders with the largest volume”</i> (Senior R&D Engineer, buyer, case 3)
Prior relationship		Over five years	

Table 4 - 8. Relationship characteristics (t_0 - t_1)

4.3.4 The characteristics of the negative turning point



The initial transgression was an arbitrary shift of engineering resources. AC found out that their assigned engineers from AE, “*who by contract shall only dedicate to their tasks*”, had been shifted to work on different projects from other OEM manufacturers (Deputy Executive Officer, buyer, case 3). The configuration of human resources was specified on the bill of materials (BOM) from RFQ and carefully manoeuvred, whereby AC noted that “*our projects need those specified staff and teams [to be fully committed to] for specific reasons*” (Deputy

executive officer, Buyer, Case 3). The transgression was perceived to be opportunistic behaviour, because “[...] *such conduct is strictly prohibited in the industry [...] a taboo that violated the industrial norms*” (Deputy Executive Officer, buyer, case 3) due to concerns about intellectual property. As a result, AC was very angry about it and complained rigorously.

AE, on the other hand, did not present a convincing explanation. In response, it attributed the issue to the prioritisation of resource allocation, explaining that: “[...] *back then we had many other customers, including Dell, HP, and Toshiba [...] they were relatively big at the time [as compared to AC] we only had limited resources [...] we seemed to spare too many resources for other customers*” (Executive Vice President, supplier, case 3).

To summarise, the negative turning point triggered by the initial transgression, an arbitrary shift of engineering resources, was of internal locus and high controllability, because it was completely the responsibility of the supplier, being voluntarily implemented by it (*Table 4-9*). Despite the incident not causing severe financial consequences, it signalled an integrity-based violation, which was perceived as opportunism. Such opportunism is regarded as a stable case, because impaired integrity indicates that the party would never be honest and ethical, which means similar conduct might reoccur in the future. Moreover, it should be noted that the allocation of critical resources can only be decided by senior management.

Violation characteristics		Descriptions
Locus	Internal	The issue had affected the dyad only.
Severity	Moderate to low	The trigger event did not cause much financial damage.
Type	Integrity	<i>“[...] they had always shifted their engineering resources from project to project. This is an absolute taboo in the industry”</i> (Deputy Executive Officer, buyer, case 3)
Controllability	High	The event was within full control of AE.
Stability	High	The event was perceived to be recurrent in nature.
Hierarchy	Between operating and corporate level	The decision was perceived to be driven by staff higher than at the operating level.

Table 4 - 9. Characteristics of the initial transgression

4.3.5 The trust violation stage



Goodwill trust

The transgression implied “*goal incongruence [between the firms] signalled by the integrity-based violation*” (Deputy Executive Officer, buyer, case 3), which had eroded AC’s goodwill trust in AE. It had “*[...] engendered conflict in business operations, the interaction and communication between sales teams in particular [...] It was a bit serious*” (Executive Vice President, supplier, case 3). Whilst the cause of this goodwill trust violation stemmed from corporate staff, it had caused high tension and operational conflict between operating staff in the buyer-supplier relationship.

Competence trust

The transgression gradually led to a series of competence-based violations, whereby limited resource prioritisation had caused constant delays in “*[...] the timeline set by AE’s each production phase [...] because of their [lacking] engineering capacity*” (Senior Purchasing Manager, buyer, case 3). Specifically, because of the lowered priority for AC, AE admitted that “*[...] for emails and other issues that we should have replied within three days, we might deal with those in a week or so [...] with respect to operational issues, we should have resolved them with more solid actions, but we might think 70 – 80% efforts should be acceptable*” (Executive Vice President, supplier, case 3).

During the trust violation process, AE had failed to fulfil AC’s expectations multiple times across different projects (i.e. commercial computers, consumer computers, laptops) and with different functional issues (e.g. IC, batteries, capacitors, PCBs, design, and manufacturing). In total, six different violating events were reported by AC (*Table 4-10*).

	Initial transgression	Transgression 2	Transgression 3	Transgression 4	Transgression 5	Transgression 6
Description	Arbitrary shift of engineering resources	IC incompatibility	Battery explosion	Capacitor explosion	Stolen PCB fabrication	Intentional order pending
Type	Integrity	Competence	Competence	Competence and Integrity	Integrity	Integrity
Locus	Internal	Internal	External	Partially external	Internal	Internal
Severity	Moderate to high	High	Low	Moderate	High	Moderate

Table 4 - 10. An overview of the transgressions

The following paragraphs briefly elaborate upon the highlighted transgressions, which significantly violated competence trust. Initially, a laptop project of an expected monthly volume of 50,000 items was terminated prematurely after its mass production due to IC incompatibility. AC was furious and claimed compensation for the loss. AC's perceived competence of AE had been eroded significantly, not only because "*AE had failed to realise the project to the market [...] damaged our reputation [...]*", but also owing to AE's poor problem handling ability and ineffective reparative attempts, as manifested in "*[...] the project ended shortly after MP due to many unsolvable issues*" (Deputy Executive Officer, buyer, case 3). Likewise, AE admitted that "*this could be seen as one of the most severe disruptions [in the relationship]*" (Senior Project Manager, supplier, case 3), because both firms had invested a lot of resources in R&D and production, but the project had failed to deliver any laptops despite subsequent extensive engineering reworking, thus resulting in the early termination.

Because of the previous incident, AC had started to hold AE accountable for other minor defects, even with an external locus being the cause. These defects included incidents of battery and capacitor explosions reported by AC's end users. Even though these transgressions were largely attributed to improper operations by the end users, AC constantly "*[...] requested explanations [...] challenged AE's product design*" (Senior Project Manager, supplier, case 3). Despite AE's "*[...] provision of theoretical explanations and relevant reports [...] formulation of preventive actions with respect to the design (e.g. widening the tolerance to*

increase safety, additional fool-proof design) [...] in an attempt to recover AC's trust (competence) back" (Senior Project Manager, supplier, case 3), AC's competence trust in AE had still been violated. This was because, AE's "*[...] problem-solving actions did not satisfy AC's expectations [...] not solid enough [...] it was very hard to reach a balance [...] there would always be a cognitive discrepancy [regarding the expected and actual outcomes regarding reparative attempts]"* (Senior Project Manager, supplier, case 3).

Goodwill trust

Following that, one of the laptop projects experienced a significant yield loss. The cause, firstly reported by the AE, was due to inconsistent quality of chips manufactured by a supplier assigned by AC, Tsinghua Unigroup (TU). However, AC were always suspicious of AE's proposed root cause, believing it was responsible for this failure owing to its design or manufacturing process. Thus, AC decided to involve a third-party, American Applied Materials (AAM), for further examination and analysis. AAM's analysis report suggested that "*a layer of PCB fabrication was stolen by AE*" (Vice president, Buyer, Case 3). AC was furious, because it perceived that AE had engaged in opportunistic behaviour in the manufacturing process again, whereby "*[...] the tin material was replaced [with other material] to save cost*" (Deputy Executive Officer, buyer, case 3). Hence, this led to a significant reduction in AC's goodwill trust, as AE clearly did not care about its interests, at least, as perceived by AC.

This transgression was very severe, as "*the pure monetary loss was about \$11 million [...] did not only reflect on product recall [...] all the materials and components remained in the factory [...] the total amount of compensation claimed with this disruption was about \$18 million*" (Vice President, buyer, case 3). For this amount of compensation, there had not been a lengthy negotiation back and forth regarding it, because "*[...] the penalty associated with PCB SMP fabrication was enacted by the court [as AC resorted to the court] [...]"* and "*AE had compensated the loss incurred shortly after*" (Deputy Executive Officer, buyer, case 3). The speed of compensation settling by AE did help the reconciliation of the violation, such that the relationship could continue to proceed, as the "*two firms could only move on and carry on the collaboration after the compensation was sorted*" (Vice President, buyer, case 3).

Competence trust

Following the incident, in the upcoming quarterly supplier assessment, AC concluded that there were six major technical and managerial problems AE had had so far and presented this finding to AE's corporate staff. These problems, as identified by AC's vice president, are illustrated in the table below (*Table 4-11*).

Problem	Exemplar quote
<i>The incapability of technical problem handling</i>	<i>"AE's competence still remained on technical support, rather than technical solution provision" (Vice President, buyer, case 3)</i>
<i>Passive procurement approach constrained by hierarchy</i>	<i>"AE's buying power was very passive and largely affected by their hierarchical power [...] their procurement [team] would only act on their boss' words or commands" (Vice President, buyer, case 3)</i>
<i>Slow responsiveness</i>	<i>"[...] their response time was extremely slow [in terms of problem identification and solution provision]" (Vice President, buyer, case 3)</i>
<i>Frequent cancellation of orders from their suppliers</i>	<i>"[...] their relationship with their suppliers [...] AE tended to cancel orders quite often [possibly due to forecasting incapability or inventory cost prevention]" (Vice President, buyer, case 3)</i>
<i>Preference over their affiliated companies</i>	<i>"[...] AE tended to place/shift orders actively to particular suppliers (e.g. connector and cable) that were actually invested by their bosses [...] their affiliated firms had grown larger and larger [decreasing AC's bargaining power]" (Vice President, buyer, case 3)</i>
<i>Unreliable certification conducted by their affiliated firms</i>	<i>"AE also used their affiliated firms to carry out technical certification. We hoped AE would use our lab instead of their affiliated companies', so we could convey expected standards to them" (Vice President, buyer, case 3)</i>

Table 4 - 11. Six major issues identified by AC

AE had tried to implement reparative attempts to close the perceptual gaps by "[...] organising interlock meetings", a weekly held face-to-face meeting between operating staff internal to AE and across organisational boundaries; agreeing to "[...] inform AC regarding

any modifications made to the manufacturing process, transportation, and packaging”; agreeing to “[...] conduct material verification at AC’s lab”; adding “[...] more checkpoints to internal control and agreeing to reverify their upstream suppliers according to AC’s audit report” (Senior Project Manager, supplier, case 3).

However, AC no longer had trust in AE’s competence anymore, so they had gradually *“shifted their orders to alternative suppliers, Hitron Computer (HC) in particular, and reduced orders placed with AE”* (Vice President, buyer, case 3). This was a behavioural outcome that resulted from deteriorating trust in both competence and goodwill trust. It should be noted that AC had an internal supplier governance system, for which AE had already received three red flags (three warnings). With one more disruption, AC would terminate the business relationship with AE.

Goodwill trust

As an outcome of the previous violating event (PCB fabrication issue), AC eliminated some of AE’s unqualified suppliers after conducting the reverification process. As a result, AE had experienced a shortage of supply, as *“[...] our critical suppliers had been limited to only two or three for other projects [...] for example, we place 50% orders with suppliers A and B. When supplier A was blacklisted [...] we simply struggled to make up full orders [...] placed rush orders on the remaining approved suppliers, which caused some delays”* (Senior Project Manager, supplier, case 3). Consequently, AE had not been able to fulfil AC’s orders in a timely manner across projects.

From AC’s perspective, however, it perceived that *“AE intentionally had pended our orders [...] AE’s attitude towards AC started to show a neglectful manner”* (Senior Purchasing Manager, buyer, case 3). This, in fact, caused a deterioration of AC’s goodwill trust in AE to the lowest point, which signalled a breach of the ultimatum. The production delay might not have been the most severe incident during the trust violation process, but *“this was the last straw that broke the camel’s back”* (Executive Vice President, supplier, case 3). At this point, AC felt that *“we could not trust AE anymore [...] cancelled all orders placed in AE [...] held up AE’s payment [...] gave up helping them to find solutions until AE figured it out”* (Vice President, buyer, case 3). With those pending orders, AC had requested their backup supplier, Hitron Computer (HC), to make up some of AE’s production volume.

The following subsection identifies some factors affecting the trust violation stage from case 3, including i) early integrity-based violation, ii) domain specificity, and iii) perceptual asymmetry.

Early integrity-based violation

The early occurrence of integrity-based violation acted as an anchor to the following competence-based violation. To be specific, after the integrity-based violation (i.e. the initial transgression), AC tended to attribute subsequent transgressions to AE's lack of goodwill, rather than competence, whereby AC noted: "*AE was not an incapable manufacturer, but they were just unwilling to fully devote their commitment to us*" (Senior Vice President, buyer, case 3). AC tended to attribute other unsatisfactory performance and operational glitches to the lack of resource allocation: "*The driving force [of the erosion of trust] was at the strategic level manifested in the prioritisation of our [AE] resource allocation*" (Executive Vice President, supplier, case 3). Hence, AC had always suspected that AE would deliberately hide critical information from them or engage in opportunistic acts in the trust violation stage. As a result, it had to spend extra effort assuring and verifying every detail on the reports, in R&D, and manufacturing. For example, "*AC had been nit-picking at every possible thing that they felt unreasonable, such as designs and materials. AC had constantly challenged [...] Their RDs reviewed the analytical report [...] also raised concerns and doubts regarding our report*" (Senior Project Manager, supplier, case 3).

Domain specificity

Cross-domain failures witnessed in case 3 had accelerated the violation of AE's competence. Following that, the accumulation of different transgressions, over time, spilled over to violate goodwill trust. However, it should be noted that the scale of collaboration as well as relationship dependence buffered the effect of cross-domain failures.

First, there were many ongoing projects across the different product categories in the dyad. Such a scale would prolong the length of a trust violation, because of 1) low sensitivity to early violations; and 2) multiple organisational hierarchies. "*Because this business was huge, it would not break after one or two small disruptions. It (the violation) was a trend in*

which a series of disrupting events had accumulated over time and finally, a triggering event led to a breakdown of the relationship. The triggering event might not have been the most severe incident” (Executive Vice President, supplier, case 3). This means that, a failure in one project was initially regarded as a fraction of the whole inter-organisational exchange unless the severity was high. AC and AE started to treat the trust violation seriously when those transgressions occurred in several projects (i.e. cross-domain failures) and started to affect the business exchange as a whole. This implies that, multiple failures across products and domains are required to stimulate the crisis mindset for larger collaborations.

Perceptual asymmetry – heightened conflict of interests

The data show that the trust violation process of case 3 invariably was rooted in a perceptual gap regarding the strategic importance between AC and AE: *“because AC had not been growing as fast as their competitors, we had no choice but to place a higher strategic importance on other OEMs, HP and Dell. in particular [...] allocate resources dedicated to AC to other customers”* (Senior Project Manager, supplier, case 3). Since the overall resources of the firm were limited, *“We [AE] had to give discount selectively to our customers based on their volume”* (Senior Project Manager, supplier, case 3). Furthermore, *“AC wanted to cut our prices [due to their declining market share] [...] AC wanted us to offer more cost reduction, yet we could not offer this to every customer”* (Executive Vice President, supplier, case 3). Such an imbalanced perception towards the business relationship, as manifested in *“lack of resource prioritisation, initiatives, and positivity”*, seemed to grow naturally and exacerbate the trust violation (Executive Vice President, supplier, case 3). AE contended that trust violation would have inevitably occurred as *“this led to conflicts in the business between the two firms [...] yet it was a rational decision that had to be made”* (Executive Vice President, supplier, case 3).

To summarise, within a six-month period, AC’s perceived goodwill trust had been violated, because AC believed that AE had violated its integrity over some transgressions. These integrity-based violations were believed to be implemented by AE’s corporate staff with high controllability. In addition, AC’s perceived competence trust had been violated, because of a series of transgressions occurring across multiple domains, from design and manufacturing to problem handling and supplier management. Notably, most of the transgressions did not reoccur on a regular basis, yet they were of high magnitude per each

transgression. Some of them had influenced external parties, including end users and AC's downstream customers. On the whole, the trust violation was of very high severity.

4.3.6 The characteristics of the positive turning point



After the relationship hit a deadlock, no official contact had been made. The relationship and ambience between corporate and operating staff between the two firms “[...] *had been very tense [...] even in AC's internal meetings, no corporate and operating staff dared to mention the relationship with AE*” (Vice President, buyer, case 3). Shortly after this event, AC placed its latest netbook orders with Mega Electronics (ME), which was AE's major competitor. “[...] *by that time, it [netbook] had started to grow a momentum [...] this was an important project [...] not given to AE but our competitor ME. This was when we [AE] perceived the relationship was at its lowest*” (Executive Vice President, supplier, case 3).

The 1st generation netbook product from AC and manufactured by ME resulted in great success in terms of its market performance. It had triggered a radical reaction in AE (a crisis mindset), corporate staff in particular. “*At this point, the difference between AE and ME was very huge. The proportion of our orders only accounted for less than 30%, while ME occupied over 60% of their total volume*” (Executive Vice President, supplier, case 3). As a result, “*we [AE] were very nervous about that*” (Senior Project Manager, supplier, case 3) and started to treat it seriously.

AE had reassessed the cost-and-benefit of this inter-organisational relationship. “*Since the relationship had dropped to its lowest point, we [AE] actually had engaged in deep reflection internal to the firm. [...] what issues did our team really have? Why were we charged so many penalties by AC*” (Executive Vice President, supplier, case 3). More importantly, AE noted that “*market and marketing had affected the cost and delivery of AE's offering to AC, so the relationship had deteriorated [...] whereas, if the exchange or the market was growing, the issues would not have been a problem*” (Purchasing Agent, supplier, case 3). This implies that AE had regained the motivation to repair the violated trust from the deadlock, because of the shadow of the future, manifested in the growing market, as well as competitor deterrence.

4.3.7 The trust repair stage



AE's general manager had engaged in unofficial meetings with AC's general manager "[...] since AC and AE's general managers played golf together on a regular basis [...] they had a good interpersonal relationship [...] it was likely that some under table agreements had been made" (Senior Project Manager, supplier, case 3). After two weeks, AC's CEO initiated a discussion in a meeting on "how AC should manage the inter-organisational relationship with AE?", thus implying that "the general managers had come to certain agreement [...] very probable that AE did commit to provide AC with more favourable support in terms of long-term demand planning and other offerings" (Senior R&D Engineer, buyer, case 3). As a result, AC's perceived goodwill trust from their general manager had been somewhat repaired, because "AE's general manager leveraged his interpersonal relationship with AC's to some extent and signalled his willingness to continue collaborating with AC" (Senior Project Manager, supplier, case 3).

It should be noted that the repair of goodwill trust manifested itself in a radical change of operational and strategic arrangements (*Table 4-12*). Goodwill trust, in this case, resembled a 'pie sharing' process, one where AE was willing to give up its profits and to increase the investment dedicated to AC. In other words, AE transferred its profits/interests to AC and expected that these financial sacrifices would pay off in the future in securing the order of the 2nd generation netbooks. These reparative responses encompassing favourable financial terms "[...] had actually worked pretty well with our corporate staff in terms of recovering the relationship after a major failure" (R&D Engineer, buyer, case 3).

Description	Exemplary quote	Nature
<i>Extension of payment terms from 120 to 180 days.</i>	<i>“[...] in our initial agreement, once the issue associated with the project exceeds 20 items, our payment term would need to change from 120 to 180 days” (Deputy Executive Officer, buyer, case 3).</i>	Operational
<i>Entitlement of AC’s testing, transportation, and insurance expenses</i>	<i>“AE also agreed to pay testing, transportation, and insurance fees and exempted 30% prepayment for AC. These miscellaneous expenses were pretty significant in total” (Vice President, buyer, case 3)</i>	Operational
<i>The revelation of cost structures</i>	<i>“AE voluntarily gave us the authority to review and modify their first, second, and third-tier suppliers. This indicates that we had more power to control their cost structure and they became more vulnerable to us” (Vice President, buyer, case 3)</i>	Strategic
<i>Establishment of global after-sales service centres for AC’s downstream customers</i>	<i>“AE agreed to set up after-sales service centres close to our international customers, as this was requested by our GM [...] AE set up service centres, in Poland, Mexico and Brazil” (Vice President, buyer, case 3)</i>	Operational
<i>Confirmation of investing in the new factory</i>	<i>“We used to have a manufacturing base in Suzhou Kunshan [...] we then built up a factory in Chongqing only for AC [...] hoped to expand business scale together with AC [...] the factory in Chongqing had been dedicated solely to AC’s manufacturing” (Senior Project Manager, supplier, case 3)</i>	Strategic
<i>The reorganisation of teams devoted to AC’s projects</i>	<i>“AE had also regrouped our teams collaborating with AC by replacing them with much operating staff from the production line to R&D” (Executive vice president, Supplier, Case 3)</i> <i>“AE built a specialised team devoted to customising and fulfilling our [business and operational] needs” (Senior Purchasing Manager, buyer, case 3)</i>	Operational

Table 4 - 12. The proposals made by AE’s general manager

It should be noted that the initial reparative responses had been completely driven by the top-down approach, for “if the corporate staff [VPs, CEOs, and general managers] could not regain trust in each other [...] did not maintain a good [interpersonal] relationship [...] how hard operating staff tried to recover would not have really mattered” (Senior Project Manager, supplier, case 3).

Such realignment of expectations between the executive staff “[...] *set the tone for the following trust repair [competence]*” (Vice president, Buyer, Case 3). To begin with, “*AE had replaced many staff from their production lines [...] also changed a lot of R&D engineers [...] AE recruited a specialised team just for AC*” (Deputy Executive Officer, buyer, case 3). The removal of boundary spanners facilitated the transition phase, because this required frequent communication and interaction between operating staff in the dyad. The former boundary spanners would have borne the shadow of the past and possibly obstructed the coordination and collaboration with their counterparts.

With the foundation of the repaired goodwill trust between executive staff, other corporate (VPs and directors in different departments) and operating staff from both AE and AC began to finalise terms and conditions agreed as well as implement necessary tasks. In this phase, AE aimed to overtake ME’s order regarding AC’s netbook in the next RFQ. Hence, AE had started building and sending mock-up samples (MUS hereafter) to AC to showcase that they could match and exceed the quality of the competitor at a cheaper cost. Over time, “*AE had made some MUS for AC’s reference [...] persuaded AC that the MUS could leverage the current product offerings, because the cost was, in fact, lower with a reasonable performance*” (Senior Project Manager, supplier, case 3). AE was willing to invest resources in manufacturing multiple MUS at their own cost that did not guarantee any future orders (the cost of MUS development was paid by AC in the past). Hence, “*in order to recover the relationship, showcase our competence, and snatch orders from ME, we had invested a lot of resources to build these MUS with the corporate staff’s approval*” (Senior Project Manager, supplier, case 3). In response to this, AC, however, did not believe that AE’s competence could be improved rapidly due to the failures across various domains: “*[MUS provision] did not change our perception on their competence. We assessed the competence based on the whole system, not samples. These samples did not mean that you could mass produce them*” (Deputy Executive Officer, buyer, case 3).

Alongside the MUS development, AE had “*engaged in a full-range reflection on our service provision and product offerings [...] we came up with a so-called strategic improvement direction*” (Executive Vice President, supplier, case 3), which was driven by its R&D department. Then, “*[AE] came up with action plans with detailed solutions to each issue. After we had managed to solve those issues within R&D [...] we then leveraged the change to other departments*” (Senior Project Manager, supplier, case 3). AE had striven to recover the perception of incompetence across departments within six months. In particular, AE knew that

AC's upcoming RFQ on their netbook would emphasise the cost very much due to the success of the 1st generation. Whilst AE finally "*developed a model that AC found attractive in terms of the performance and cost*" (Executive Vice President, supplier, case 3), the latter was still in doubt about the former's competence in manufacturing netbooks.

AE had continuously been sending new MUS to AC with a performance benchmark (targeted at their key competitor, ME). Thus, AC decided to place a small number of trial orders with AE initially and gradually increased the volume, as "*AC was satisfied with the quality of the products. [...] they first placed 10 more tooling units before proceeding to the MP stage. One or two months after MP, AC found that those models had demonstrated a great market penetration. They had then kept adding the volume gradually*" (Executive Vice President, supplier, case 3). In addition to this, at that time, AC had already fallen behind its competitor, ASUS, regarding the development of a new netbook. With AE's full support, AC had caught up with the competition, for "*AE had managed to recover the progress and delivery schedule for AC [...] within a very short timeframe. [...] allowed AC to catch up in terms of the volume*" (Field Application Engineer, supplier, case 3).

Then, AC's perceived that the competence in AE, on the whole, had been repaired to some extent. Specifically, the strong comeback of the netbook business unit had leveraged AE's laptop business unit in terms of technical capabilities. In other words, "*[...] the competence trust repair had been driven by the great performance of netbooks, which seemed to overshadow the previous violations that occurred in our laptop business unit*" (Executive Vice President, supplier, case 3). This effect of competence leverage was, in fact, closely associated with the growing market, for "*[...] since the market was still there, it all came down to the product design and quality. You could still regain the lead [...] by presenting competitive offerings [...] if you did not have new products to compete with or to secure the share of the market, it would not be possible*" (Executive Vice President, supplier, case 3).

This leveraging effect had not only had an effect on competence trust, but also, goodwill trust, as perceived by AC, because AC it felt that "*[...] AE had been very sincere and bona fide in terms of the reparative efforts and they had also demonstrated willingness to receive future orders from us. [...] AE did make some commitment. During the repair process, their GM was so focused and concentrated*" (Vice President, buyer, case 3). Similarly, this was reflected in the increase of the exchange volume, for which "*AC became our largest customer, while we were AC's largest supplier [...] the relationship [goodwill in particular] had gradually been repaired as the business had already expanded*" (Executive Vice President,

supplier, case 3). That is, as the output of the zero-sum game increased and ‘*the sharing of goodwill*’ also did so.

AC concurred that “*we witnessed that AE had gone through a huge transformation. This full-scale improvement in the product, manufacturing procedures, and management, had led to their receiving subsequent orders from Apple regarding panel manufacturing*” (Vice President, buyer, case 3). Together with the success of the netbook in the market, AC’s competence and goodwill trust in AE had been noticeably repaired. The repair of AC’s competence trust in AE led to a receipt of orders of its 2nd generation netbooks. The resulting strong market performance, in turn, fostered the repair of AC’s goodwill trust. This upward spiral continued as the both parties intended to catch up with the market, whereby “*AC’s boss thought we could place more orders with AE [to strike while the iron is hot]*” (Deputy Executive Officer, buyer, case 3). Thus, AC had given AE more profitable orders including 15” laptops and projects with a large volume. Likewise, AE concurred that “*the both parties wanted to catch up with the market [...] both parties had in fact taken a lot of risks, a lot of risks*” (Executive Vice President, supplier, case 3). In fact, the risk-taking behaviour had finally paid off as “*AE had successfully fulfilled all of AC’s business goals and recovered the relationship in 2010-2011. [...] it was the first and only time AE exceeded QT in terms of the market share. Because of the success of the netbooks, AC had gained significant global recognition [...] ranked as the second top laptop manufacturer worldwide. The relationship had reached a peak, rising from the bottom*” (Executive Vice President, supplier, case 3).

To summarise, AC’s perceived goodwill trust, by the general manager and CEO, in particular, had been repaired initially, because of significant operational and strategic arrangements being agreed by AE’s general manager. The financial sacrifice directly transferred AE’s profits to AC’s, which signalled the former’s goodwill to the latter. The financial sacrifice made by AE was perceived by AC to be a sign of concern and care towards their interests. After the expectation between AC and AE was realigned, corporate and operating staff had begun to finalise the terms and conditions and implement the agreed tasks. In parallel, not only had AE engaged in full-scale internal quality overhaul, for they had also constantly sent improved mock-up samples at their own cost to AC in an attempt to showcase its competence over its competitor, ME. Approximately six months later, AC was finally willing to adopt AE’s sample experimentally. The trial run was successful and AC’s perceived competence trust in AE had been recovered. Thus, AC had been officially awarded the RFQ of the 2nd generation netbook to AE. This project had yielded exceptional market performance,

which had leveraged to AC and AE's other business units (e.g. laptop business unit), resulting in a positive spiral. The joint success had, in turn, elevated AC's perceived goodwill trust in AE. It manifested itself in the exchange volume between AC and AE, for which "*AC accounted for over 70 to 80% of AE's overall volume*" (Senior Purchasing Manager, buyer, case 3). AE concurred that "*the exchange volume exceeded \$5.6 billion per quarter. At the peak, the total sales had reached up to \$11 – 14 billion per quarter*" (Executive Vice President, supplier, case 3).

4.3.8 The post-repair stage



Competence trust: downward recalibration

After the process of trust repair, AC's perceived competence trust in AE was not as high as in the pre-transgression stage, because it admitted that "*[...] we cannot judge technical improvement from a single angle, but through a multidimensional lens [...] AE had still behaved reactively rather than proactively. [...] we still needed to instruct and command them before they would respond*" (Vice President, buyer, case 3). This means that despite AE's reparative efforts that signalled capability overhaul, AC did not perceive AE's reparative responses fully addressed the multifaceted violated domains. Likewise, there had been a mismatch between AC's operating and corporate staff regarding AE's competence: "*Our corporate staff might view AE as all-encompassing and could solve their important demands [price and time to market in particular] [...] from the engineering and operating perspective, but we felt that whatever and whenever we asked them to review, they did not give us satisfactory results*" (Senior R&D Engineer, buyer, case 3). AE had only demonstrated competence in particular domains, but not all. For instance, AE only displayed their full competence in the most lucrative projects in RFQs to secure new orders. Thus, the prolonged exchange in the repair process taught AC one thing that, "*we [AC] should not give too many projects to AE (after the success of netbooks). If we gave them too many, their manpower and capabilities were just not ready [...] could not coordinate effectively and internally*" (Deputy Executive Officer, buyer, case 3).

Goodwill trust: upward recalibration

Throughout the repair process, AC's perceived goodwill trust in AE was slightly higher than during the pre-transgression phase. This could be attributed to the joint success in the market, the expansion of the total, as well as the significant compromise AE made to demonstrate the concern for AC under the shadow of the future, i.e. increasing the ratio AC had of that total. Thus, AC perceived that "[...] the relationship was better in the post-repair stage than the pre-transgression stage. [...] goodwill trust seemed to be fully repaired" (Vice President, buyer, case 3). This means that not only had AC enjoyed an expansion of profits, for it had also appropriated a greater share from the business growth. The trust violation and repair process had radically changed the buyer-supplier relationship in terms of profit distribution, additional contractual terms as well as conditions that constrained AE's future profitability and operations. Thus, as AE became more dependent on and vulnerable to AC, the latter's goodwill trust in the former inherently increased. Apart from the narrative data collected from both parties, the secondary data below can clearly substantiate the effect of trust violation and repair experienced by AC (*Figure 4-4*).

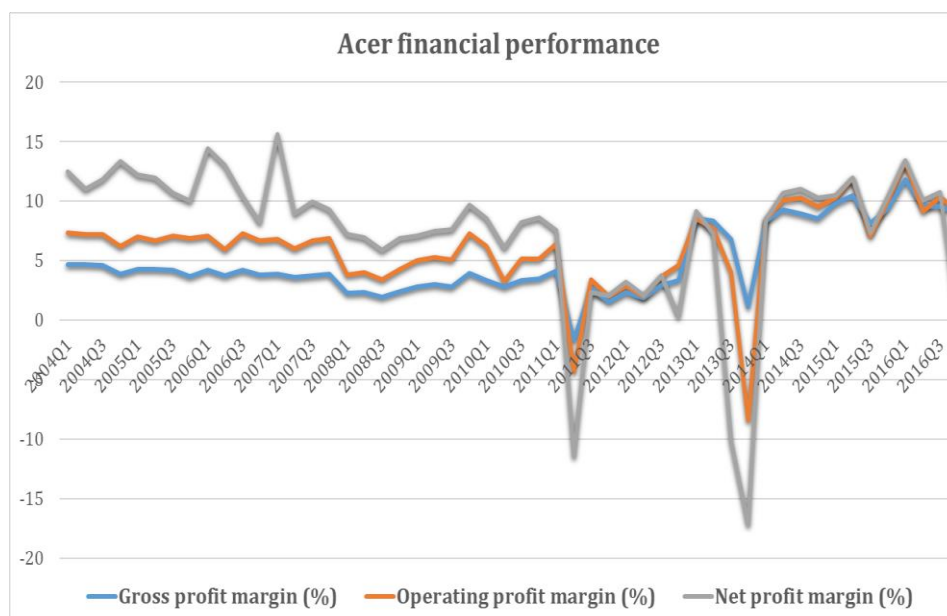


Figure 4 - 4. AC's financial performance during the trust violation and repair (Source: Ft.Market)

4.4 CASE 4: BUYER (SC) – SUPPLIER (SM)

4.4.1 Case background

Buyer: SemiCon Inc.

SemiCon Inc. (SC hereafter), established in 1998, is a Taiwan-based company that primarily engages in integrated circuit (IC) packaging and testing (mostly dynamic random-access memory) as well as turn-key services (modular production). The demand for memory chips is largely driven by four major products, namely smartphones, tablets, PCs, and servers. SC has over 3,000 employees with nearly \$370 million in sales generated in 2014 (SC's annual report, 2014). SC is ranked the top three largest memory backend provider in the world (SC Company Website, accessed in 2018).

As an assembly and testing plant, SC relies heavily on orders from downstream companies, including Taiwan-based (Winbond, Nanya Technology), US-based (Micron Technology and SanDisk) and Japan-based companies (Toshiba). SC generated 29% of sales from the domestic market and 71% from overseas in 2014. In 2014 (when the first reported trust violation broke out), the former oligopoly firm, Elpida, claimed bankruptcy and was later acquired by Micron Technology. Since then, the market has been dominated by three mega-first-tier memory companies worldwide, namely Samsung Electronics, Hynix, and Micron Technology (Chinatimes.com, 2015). Micron Technology (MT hereafter) has maintained close cooperation with Taiwan-based assembly firms (i.e. PTI, SC, and ChipMOS) since 2014 to compete with Korea-based memory providers in terms of orders from Apple and other consumer electronics providers. In fact, most, if not all, assembly plants in Taiwan depend on MT's orders to sustain growth.

Supplier: SemiElectro Materials

SemiElectro Materials Co., Ltd. (SM hereafter), established in 1970, is headquartered in Japan, with over 6,500 employees worldwide. It supplies a range of chemical- and electronic-related materials for the semiconductor industry, such as adhesives, epoxy molding compounds, wires, and substrates (SM Company Website). In 2004, SM realised the fastest growth rate of the Taiwanese semiconductor and electronics industry. It set up a subsidiary in Taiwan to take advantage of geographical proximity and thus, fulfil regional demand more efficiently. Notably, Taiwan has become the world's largest market for semiconductor materials,

generating over \$10 billion in sales in 2012 (Semi.org). The Taiwanese subsidiary is responsible for sales, import-and-export, production (a few product categories with small batch), and immediate customer support services. On the other hand, SM's headquarters operates mass production for almost all product categories, conducts R&D and lab analysis as well as arranges deliveries. That is to say, the Taiwanese subsidiary handles regional financial exchanges and some front-line issues, while the Japanese headquarters supplies physical products and offers technical support (SM Company Website, accessed in 2018).

Distributor: SS Holdings

SS Holdings Co., Ltd (SH hereafter), established in 2007, is a Taiwan-based distributor that principally operates in franchising materials, components, and equipment (e.g. epoxy molding compounds, substrates, films, glues, lead frames, and wires) around the world (mostly Japanese and Korean suppliers) for the IC assembly and testing sector. SH, with about 40 employees, manages to offer a competitive price, on-time delivery, and robust after-sales services (SH Company Website, assessed in 2018). *"In 2012, SH was appointed [by SM] as an official agent to manage product exchanges with SC"* (Associate Vice President, distributor, case 4). Notably, several corporate staff from SH used to hold VP positions with various well-known IC assembly firms. Thus, some of *"the corporate staff still maintain a good personal relationship with industrial partners, especially at the corporate level"* (Sales Engineer 2, distributor, case 4).

This is a triadic relationship involving a supplier (SM), distributor (SH), and a buyer (SC) in terms of the supply chain configuration. Yet, this relationship can be ultimately seen as a buyer-supplier one, because *"SC places its orders and negotiates its prices directly with SM rather than through SH"* and *"SM also arranges its shipment deliveries directly to SC's warehouses"* (Sales Engineer 1, distributor, case 4). In this relationship, SH solely serves as a bridge to facilitate communication between SM and SC (e.g. updating SM's R&D progress, conveying the yield rate of SC's production lines regarding particular materials, and presenting a regular technical roadmap) as well as providing after-sales support (e.g. carrying out initial problem diagnosis, explaining the cause of operational difficulties, and conveying improvement action plans). That is, *"SH can be seen as the extension of SM's sales team and the extension of SC's procurement division"* (Associate Vice President, distributor, case 4). SH, in this particular case, is regarded as a knowledgeable observer and a reliable source that

witnesses the trust repair process between SM and SC. SH's opinions in this buyer-supplier relationship are significantly valued.

Regarding the dyadic relationship, SC is situated downstream of the IC supply chain (*Figure 4-5*). The owner of a wafer (i.e. integrated device manufacturer and IC design house) entrusts SC to assemble and test it or sometimes package it into finished goods. Then, SC returns the processed wafer back to its owner. Wafer outputs and dies per wafer are key performance indicators (Semi.org). In the packaging sector where SC operates, the three most critical components (i.e. die attached film, substrate, and epoxy molding compound) are mainly supplied by SM as it is considered to be the leading supplier for semiconductor-use materials (slightly ahead of Sumitomo Bakelite and Nitto Denko) (Semi.org). Hence, SM is viewed as a very critical supplier to SC. This case centres on the exchange of die attached films between SC and SM.

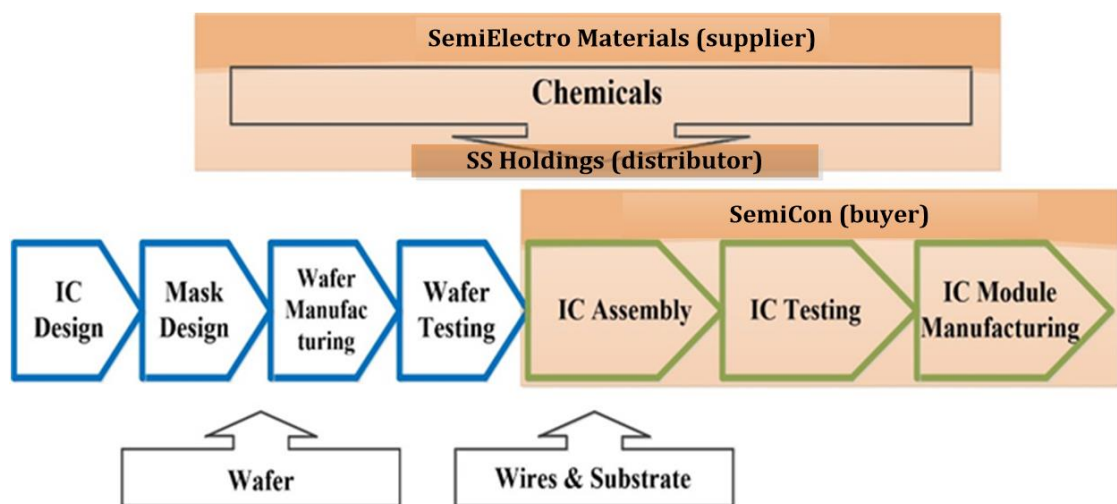


Figure 4 - 5. The supply chain for the semiconductor sector (Source: the researcher)

4.4.2 Overview of the case

This subsection provides an overview of the dynamics between competence and goodwill trust in the trust violation and repair stages (Figure 4-6).

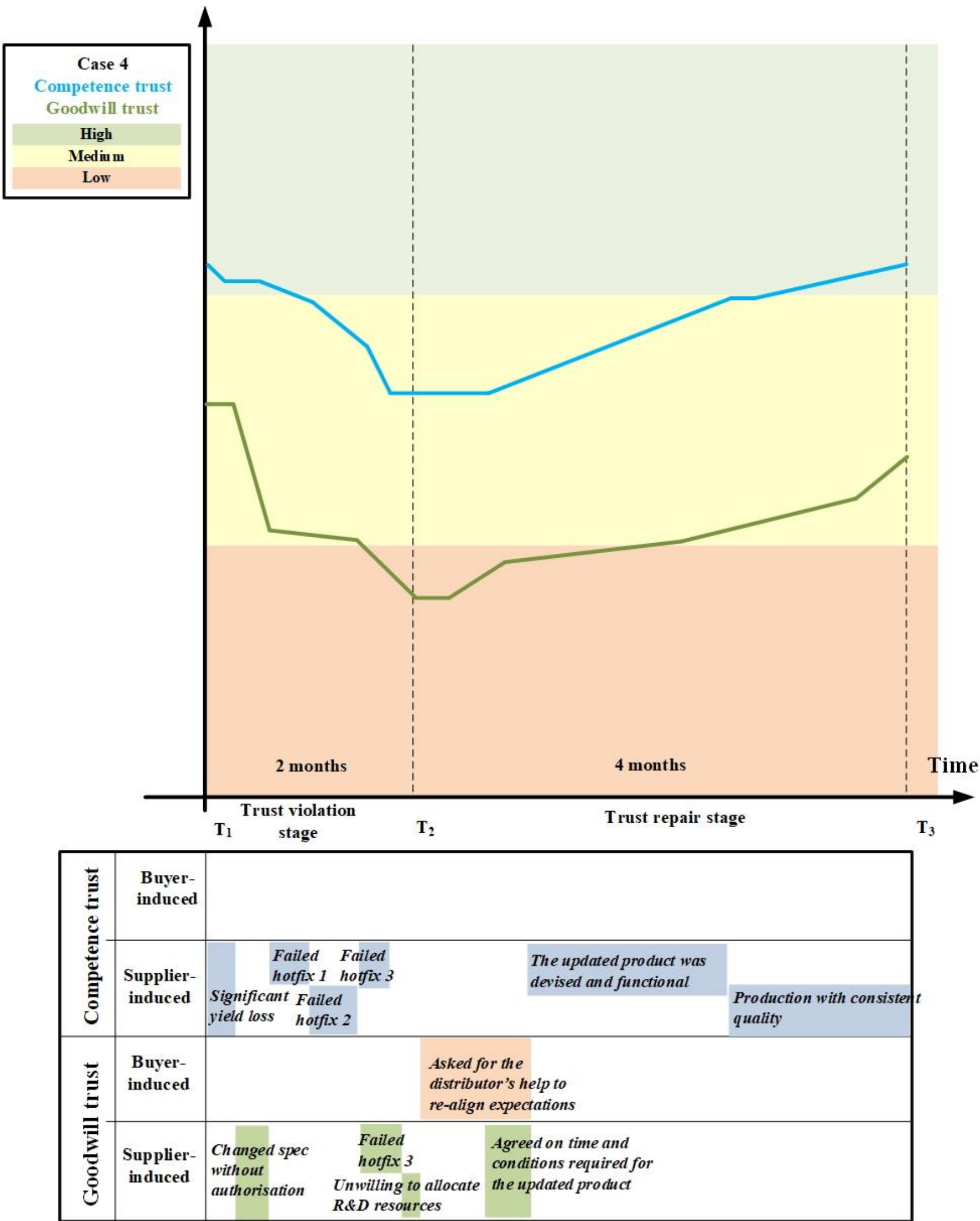


Figure 4 - 6. A graphical illustration of the complete episodes of the trust and repair process for case 4 (buyer's perspective)

4.4.3 The pre-transgression stage



The subsection describes the relationship characteristics between SM and SC before the trust violation (*Table 4-13*). Relationship dependence, as perceived by the buyer, was high on the whole, because “[...] *SM is the top 1 raw material supplier for die bonding tapes and related chemicals [...] we depend on them more than they do on us*” (Senior Purchasing Manager, buyer, case 4). Another industry-specific characteristic is that “[...] *in the IC industry, films are binding materials. Once the parameters are set for a material, it is kind of impossible to change the material [over the product lifetime]*” (R&D Engineer, buyer, case 4).

The inter-organisational relationship was characterised by high competence trust, because “[*performance indicators*] *consist of different scores with respect to quality, delivery, cost, and service. [...] SM is ranked as a grade A vendor [the best category among alternatives]*” (R&D Engineer, buyer, case 4). Conversely, SM was perceived to possess moderate goodwill trust, because “*over a decade of cooperation without any bad record, SM had demonstrated good credibility*” (Senior Purchasing Manager, buyer, case 4). Yet, such consistency of intention to collaborate was based upon good organisational integrity, rather than benevolence between the partners (*Table 4-13*). Last, SM and SC had been collaborating for 12 years, which signals a high relational embeddedness.

Relationship characteristics			Quotes
Relationship dependence	Relationship investment	High	<i>“In the initial phase of our R&D, we have to carry out evaluation and trials of the first, second, third, and all other alternatives simultaneously. [...] once you pick one that outperforms other materials, you’d just stick to it until MP. It is unlikely to change after the choice”</i> (Senior Purchasing Manager, buyer, case 4)
	Quantity/quality of alternatives	Low	<i>“Since SM is an international organisation, they mainly sell to Japanese buyers, followed by Taiwanese plants. [...] SM approximately accounts for over 50% of SC’s EMC and DAF purchases”</i> (Senior Purchasing Manager, buyer, case 4)
	Structural commitment	High	<i>“...even if we wanted to change the material, we still need to report to our client. Our client may hold some concerns over the reliability and impact on the performance of the new material”</i> (R&D Engineer, buyer, case 4)
Competence trust		High	<i>“Their [SM] competence was well recognised. This belief had been enhanced over time as new products were developed and the manufacturing process was improved”</i> (Senior Purchasing Manager, buyer, case 4)
Goodwill trust		Medium	<i>“To a certain extent, we have a cooperative relationship. Yet, I personally think this is just a normal relationship between a buyer and a supplier. That is it”</i> (Production engineer, supplier, case 4)
Prior relationship		Long	12 years

Table 4 - 13. Relationship characteristics (t₀ - t₁)

4.4.4 The characteristics of the negative turning point



The initial transgression that triggered the negative turning point was a functional failure relating to chip pickup. A newly developed die attached film (DAF) (M3) aiming to replace the existing DAF (M2) was applied on chips from SC’s downstream customer, Micron Technology (MT), after the specification presentation conducted by SM. After a few production runs, “[M3] had failed [...] to solve issues from M2 [...] caused a significant reduction in yield rate (40%) on the production line” (Sales Engineer 1, distributor, case 4). SC had to notify and compensate MT regarding the damage inflicted by its yield loss,

according to the contract. *“The products in that batch [...] had a very high unit price, over \$20 per die. That probably added up to \$54,000”* (Sales Engineer 2, distributor, case 4). Whilst SC’s senior purchasing manager claimed that *“it was not a great loss because of the small volume. It was within our tolerable range”*, SH’s Sales Engineer 2 suggested that *“this issue required director-level staff to attend to it, which was considered to be quite senior for SC [indicating high severity]”*.

SC intended to pass on the compensation charge to SM, because it held the latter fully accountable for the transgression. However, SM refused to pay regardless of multiple meetings and explained: *“I told you that the batch was only a working sample. [...] free samples (M3) rather than real purchases from you [...] you should at least do some tests in-house. Your losses are not our business”* (Associate Vice President, distributor, case 4). SM also added that *“[...] we did mention to SC that the usage of the parameter (M3) should not be so different compared to the original one (M2) [...] yet, I would suggest you not to apply it on your customers’ dies”* (Sales Engineer 2, distributor, case 4).

SC did not accept this explanation and they felt that SM’s engineers had withheld information about the specifications and parameters in the presentation, whereby *“SM did not explicitly highlight this change in the presentation [...] we were unaware of this condition and supporting evidence about it”* (Senior Purchasing Manager, buyer, case 4). It was corroborated by SH that, *“the engineer [SM] did not actively compare and contrast the detail and difference between the two datasheets [final version of M2 and M3]. That was where and why the misunderstanding occurred”* (Sales Engineer 2, Distributor, Case 4). During the investigation, SC found that SM had actually modified the product formula without SC’s authorisation *“[in an attempt] to solve our competitor’s problem simultaneously by applying an antistatic solution on the product SM agreed to offer us”* (Senior Purchasing Manager, buyer, case 4).

To summarise, the negative turning point triggered by the initial transgression, functional failure (that caused chips to crack when picked up), was of an internal locus and high controllability (Table 4-14). It was fundamentally caused by a mix of operating and corporate staff. The former were held accountable for a less than thorough spec presentation, while the latter were deemed responsible for SM’s attempt to solve SC and their competitor’s different technical issues at once (but it withheld such information in the presentation). Moreover, the transgression was first perceived as a competence-based violation, but with more information being acquired, SC attributed it to SM’s integrity. The severity of the transgression was

moderate, because it affected an important customer, despite there being tolerable financial compensation.

Violation characteristics		Descriptions
Locus	Internal	1) SM did not explicitly and fully communicate M3's technical specifications in the presentation. 2) SM attempted to solve SC's issue and that of their competitor in one run.
Controllability	High	The incident could have been controlled, if they [SM's engineer and production manager] had strictly followed the protocol.
Stability	Low	<i>"In the material modification process, the quality and parameters of DAF tended to improve over time"</i> (General Manager, distributor, case 4)
Severity	Moderate	1) The pure financial loss of MT's chips was over \$54,000 plus SC's resources (e.g. equipment, people, time, and other materials). 2) Director-level staff got involved, potentially because of the importance of the customer [MT].
Hierarchy	Operating/ corporate level	<i>"[SM] engineer did not clarify the detail of the material. Their sales manager also thought this material might not be an issue, so he did not raise this specific detail the, considering the level of adjustments as not being significant"</i> (Sales Engineer, distributor, case 4)
Type	Integrity	Initially thought as competence-based violation, but as more information became available, the cause shifted to being an integrity-based one.

Table 4 - 14. Characteristics of the initial transgression

4.4.5 The trust violation stage



This subsection describes the dynamics of the violation of competence and goodwill trust following the negative turning point. There were multiple transgressions that occurred in this stage (*Table 4-15*).

	Initial transgression	Transgression 2	Transgression 3	Transgression 4
Description	Functional failure that caused chips to break when being picked up	Failed hotfix (update version: M3a) offered by SM	Failed hotfix (update version: M3b) offered by SM that led to a new operational issue	Failed hotfix (update version: M3c) offered by SM that led to another operational issue.
Type	Integrity	Competence	Competence	Integrity
Locus	Internal	Internal	Internal	Internal
Severity	Moderate	Low	Moderate	High

Table 4 - 15. An overview of the multiple transgressions in trust violation

Goodwill trust

When SC investigated the transgression, they then attributed the transgression to an integrity-based violation, as “*SM cannot change anything on the promised product, because it is regarded as a major change to us, rather than minor. [...] would have a great impact on our parameter settings*” (Senior Purchasing Manager, buyer, case 4). The erosion of goodwill trust was not only caused by the broken promise of the specific product, but also, by a lack of concern over SC’s interests. As a result, SC’s goodwill trust in SM had been violated: “[...] *SM failed to fulfil our expectation of informing and communicating product phenomena candidly and completely. This kind of behaviour was totally unacceptable*” (Senior Purchasing Manager, buyer, case 4).

Competence trust

Following the transgression, SM promised to work on an improvement action plan to solve the chip pick-up issue. However, it failed to deliver the solution after three consecutive updates (M3a, M3b, and M3c) of the DAF formula. Not only did “*every update lead to different technical issues*” (R&D Engineer, buyer, case 4), for these unsuccessful reparative attempts spanned from the operating level to corporate level in that it “[...] *had involved many mistakes*

and errors, not just technical but also managerial, thus many senior staff were involved [...] in solving the issue” (Sales Engineer 2, distributor, case 4).

Goodwill trust

These unsuccessful updates came with a cost. “[SC] had wasted a lot of resources, including human, materials, time, and equipment” (Senior R&D Engineer, buyer, case 4). SC’s goodwill trust had been eroded, because it perceived that SM was capable of solving the issue quickly, but had chosen not to. SC realised that “*SM is not nobody, they are almost the largest IC material supplier in the world. If they cannot solve your problem, how can you expect this from other smaller firms*” (General Manager, distributor, case 4). Such reputational status posed a constraint for further competence trust erosion. That is, SC’s doubting SM’s competence had gradually shifted to their goodwill, for it perceived that “[SM’s] support was not active and doubted [SM’s] sincerity in solving the issue” (Production Engineer, supplier, case 4). SC knew SM was more than capable and resourceful enough to solve the issue in a short period of time.

The tension had escalated from the operating level to the corporate level, for “*both parties’ operating staff had continuously engaged in discussions, but no substantive progress was made [because they did not have the authority required to drive compromises or breakthroughs]. The situation had rather amplified*” (Sales Engineer 1, distributor, case 4). As a result, SC had become increasingly frustrated, as illustrated by: “*With SM’s multiple updated samples, many of those just didn’t work. [...] would you be upset?*” (Senior R&D Engineer, Buyer, Case 4). SC’s goodwill trust in SM had been further eroded, because the trust violation had caused a significant damage to its reputation in the eyes of MT. It should be noted that the compensation claim from MT regarding the initial transgression, \$54,000 direct financial loss, was in no way comparable to the reputational damage to SC and subsequent immeasurable loss with respect to its strategic arrangements, as “[...] *It had delayed our production [...] we could not meet MT’s delivery time*” (Senior R&D Engineer, buyer, case 4).

The following subsection identifies some factors affecting the trust violation stage from case 4, including 1) domain specificity, 2) market dominance, and 3) perceptual asymmetry.

Domain specificity

With case 4, the violation of competence trust had been contained, because these failed updates were perceived to fall within a single domain of competence (the same product category). Specifically, SC perceived that “[...] *the issue was not about our distrust in SH or SM [as a whole], this distrust was in fact placed on the R&D and manufacturing process of making/ updating this material. [...] the process of devising the material was sloppy*” (Senior Purchasing Manager, buyer, case 4). Hence, domain-specific transgressions seemed to constrain the erosion of competence trust.

Market dominance

SC’s reputational status posed a constraint for further competence trust erosion. That is, SC’s doubting SM’s perceived competence had gradually shifted to its perceived goodwill, whereby the former believed that “[SM’s] *support was not active and doubted [SM’s] sincerity in solving the issue*” (Production Engineer, supplier, case 4).

Perceptual asymmetry: conflict of interests

It can be seen that not only did SC doubt SM’s competence and goodwill trust, but “[SM’s] *R&D also suspected the quality and condition of SC’s evaluation [...] because the engineering capability for [SC] belongs to a slightly below average band*” (Production Engineer, supplier, case 4). The engineer continued that “[...] *even if we offer them better products, these products may still fall short of their expectation. [...] Assume you are in a kitchen, if your chef is lacking the capabilities required, even if I offer you the best ingredients, you cannot produce any decent dishes*”. The perceptual divergence of each party’s competence and goodwill in the dyad had exacerbated the process of trust violation.

4.4.6 The characteristics of the positive turning point



At this moment, the distributor SH took a very active role in aligning SM and SC's expectations. Considering SC's dependence structure and the shadow of the future, "[...] *there is a huge difference between SC and PTI [1st tier packaging firm] since SC is a firm with fewer and limited resources [...] if by chance SC offends a major material supplier, like SM, they may not receive any materials in the future*" (General Manager, distributor, case 4). SC immediately removed the director in charge of the R&D department due to his lack of execution: "*the former R&D director did not have good interpersonal connection with corporate staff in SM nor SH [...] he could not motivate SM to solve SC's issues effectively*" (Sales Engineer, distributor, case 4). The newly appointed director intended to drive SM's initiatives for continuous and efficient problem solving, so "[SC] *drove the distributor SH to push SM since their corporate staff have a better interpersonal relationship with SM's. [...] we had to seek SH's assistance to drive SM's cooperation*" (Senior R&D Engineer, buyer, case 4). Such cost-benefit analysis was momentary, because SC clearly understood that they had not got many options. They could not stall (as the downstream customer was waiting) or exert their buying power due to the relationship dependence.

4.4.7 The trust repair stage



SH played a critical role in realigning the expectations (goodwill trust) between SM and SC by facilitating information sharing and operational arrangements. SC wanted to change SM's perception that "[...] *SM might think that we chose not to do anything because we did not want to change*" (Senior R&D Engineer, buyer, case 4), thus signalling their intention to continue the collaboration. SH's corporate staff conveyed SC's positive intention to SM's corporate staff as "*they have pretty good personal bonds*" (Production Engineer, supplier, case 4).

To SM, SH "[...] *discussed possible consequences of the issue [not being solved quickly]*" (General Manager, distributor, case 4), with a particular emphasis on the perception of MT. The general manager continued that, "*since SM and SC still had to solve this, [they] cannot say that [they] want to give up unless they do not want to receive future orders [from MT]*". SH strived to convince SM and drove their motivation to repair, because it required SM to devote more engineering and managerial resources. "*While this event [the violation] might*

be 10-15 in order of organisational priority, far from the top of their tasks, our role is to change this priority” (General Manager, distributor, case 4).

To SC, “[SH] convinced SC with a range of benefits it might bring about [...] the consequences of not complying with this update [...] in a timely manner”. Moreover, SH also “[...] suggested SC should admit that they had failed MT’s products and just treat the compensation as a part of its learning costs” (General Manager, distributor, case 4). This action served as a sign of goodwill as perceived by SM. In addition, at this point when MT had doubts about SC and SM, “[SC and SM] didn’t want to highlight this issue at this critical moment, because none of the parties wanted MT to perceive them as being incapable suppliers” (General Manager, distributor, case 4). Hence, SH helped to channel the competitive ambience towards a more cooperative one through directing towards a common goal (to satisfy MT’s requirements). SC stated that, “‘it is harder to be cold and detached when you look someone in the eye’. No matter how frustrated and angry you are, you would still sit down and talk it over in a face-to-face situation. We had to find common ground before communicating the specifics based upon mutual cognitions and requirements” (R&D Engineer, buyer, case 4).

SM and SC both recognised that, “the situation could not get any better if the end customer [MT] is informed because they would, firstly, challenge SC’s manufacturing capabilities and secondly, suspect SM’s technical ability” (General Manager, distributor, case 4). Thus, this direct and indirect pressure from MT had facilitated the trust repair process, which was reflected in a changing perception from the specific, the violation per se, to the general, the broader common goal of fulfilling MT’s requirements. That is, the ambience of competition had then shifted to cooperation, because “SM and SC were in the same boat and both agreed to improve the product with a joint effort for the successful MP” (Production Engineer, supplier, case 4).

In addition, during the repair process, SC “[...] had to ask the supplier [SM] to conduct analysis that they couldn’t carry out in their plant [because]. MT would definitely ask us to supply an experimental report of the phenomenon. At this point, the supplier and we were on the same team (interests were aligned), rather than opposing parties” (Senior R&D Engineer, buyer, case 4). This indicates that SC’s goodwill trust in SM had started to return, not only because SH had persuaded SM to work towards a common goal, but SH also guaranteed to SC that SM had good intentions. “SM had become more responsive” (R&D Engineer, buyer, case

4) and they promised that “[we] would carry out as many assessments as we can or anything that can be done [to fix the issue]” (Production Engineer, supplier, case 4).

After aligning expectations between corporate staff from SC and SM, these two parties reached a consensus of specific terms and conditions in which “*the development process of the next sample (e.g. conditions and following tests) [should be conducted] in SM’s lab in Japan. [...] conducted experiments under tougher conditions. [...] delivered the sample to SC for further tests in SC’s lab*” (Sales Engineer 2, distributor, case 4). Meanwhile, SH played a technical assisting role to both parties. To SM, SH had collected the feedback of the parameters adopted by other packaging firms as a benchmark. Together with SH’s expertise in the IC assembly process, SH had facilitated the troubleshooting and provided possible solutions for SM’s R&D team.

To SC, SH had assisted SC in adapting to the material by communicating “*critical technical transformations in the industry*”; suggesting “*[relevant] parameter modifications from other packaging firms*”; and advising “*SC to change resource allocation to speed the problem solving*” (General Manager, distributor, case 4). Off the record, SH’s associate vice president had approached the engineers responsible for the case and “*[took] those engineers in charge for dinner and [diverted] their attention away from focusing on this matter*” during the development of the updated version of M3 (Associate Vice President, distributor, case 4). Eventually, “*[...] the working sample was developed in Japan and passed all the tests in SC’s lab*” (Sales Engineer 2, distributor, case 4). “*After the proposal, M3d, the whole production was smooth and running. This material was completely useable [...] and of better performance*” (Senior Purchasing Manager, buyer, case 4). Thus, SC’s competence trust in SM “*[...] had started to recover at a faster pace*” (Sales Engineer 2, distributor, case 4).

As the workable sample was developed, SH corporate staff advised SC’s R&D director to introduce M3 (the model of DAF) on new product lines from the R&D department to speed up the rate of adaption. After a few batches of trial runs, it had gradually officially been adopted by SC’s production lines. “*The performance of M3 had shown an all-around improvement. The result was definitely better than M2*” (Sales Engineer 1, distributor, case 4). Such effectiveness seemed to drive “*[SC] to regain trust (goodwill) in SM [...] since we had cooperated for long enough [...] demonstrated good intention to solve the problem [...] actually delivered the product*” (Production Engineer, supplier, case 4).

After a series of stable deliveries of M3 lasting almost a month, production was halted, because a defective appearance of the product [i.e. black lines on the surface of DAF] was discovered by SC. “[SC] were very worried about that [...] wanted to shift back to M2. After the first incident, they were very afraid of any issues [...] could not tolerate any more defects, especially before the MP phase” (Sales Engineer 2, distributor, case 4). The growing suspicion over the quality of DAF by SM also halted the repair of competence trust. In response to this, SM worked closely with its subcontractor and corrected the formula over a short period. After that, SM was able to restore consistent supply. At this point, SH “[...] suggested SM to tighten their quality assurance and quality control [...] to look into details [...] to prevent any recurrence” (General Manager, distributor, case 4). SH also urged SC to speed up the replacement process. As a result, SC’s director of R&D department had begun close collaboration with the production department to speed up the process of product replacement after this minor disruption. In concert with the production department, M3 was gradually introduced to replace all of SC’s existing product categories on the production lines. “The competence was somewhat recovered, which manifested itself in an increasing exchange volume [of M3]” (Sales Engineer 1, distributor, case 4). In particular, “SM had become our major supplier with respect to the DAF product category” (Senior Purchasing Manager, Distributor, Case 4).

Over a series of constant communication and operational adjustments of the trust repair process, SC perceived that “the material modification is unlikely to be achieved in one step, but rather, is an iterative process of trial-and-error between the two parties” (Senior R&D Engineer, buyer, case 4). He continued that, “the overall trust was 80 initially after SM successfully devised M3d. Following that, the quality had been quite stable [except the appearance issue, which fortunately was proven to be harmless to the yield]. They had been very supportive and responsive in terms of subsequent problem solving and interaction [...] with a positive attitude”. Furthermore, “the yield rate did improve a lot, so the relationship [a mix of competence and goodwill trust] could be recovered efficiently” (Sales Engineer 2, distributor, case 4). It can be seen that competence and goodwill had been reinforcing each other (positive spiral) in this phase.

It should be noted that the shadow of the past buffered the dyad, as SC perceived that after “more than 10 years of collaboration, we could not just replace them because ‘far water does not put out a near fire’. A new partner may not work/match better than SM. You still have to experience another unknown phase-in period” (Purchasing Agent, buyer, case 4). In

addition to this, SC proposed that *“since you had experienced a setback, you’d expect that the worst thing that could happen is just like this”* (R&D Engineer, buyer, case 4). The trust repair process alleviated the magnitude of negative expectancy in the future.

To summarise, competence trust had been repaired, because SM initiated reparative responses, according to the prior agreements and eventually, developed a workable solution (M3). SH advised SC to incorporate M3 into new products. The enhanced performance not only boosted competence trust, but it also showed that the good intentions of SM had finally paid off, thereby repairing goodwill trust. Despite a short halt in production due to the abnormal appearance, SC’s competence had been further repaired by the facilitation of SH, cross-functional collaboration within SC, and an increased volume of quality materials.

4.4.8 The post-repair stage



Competence trust: near restoration

After the trust repair process, whilst competence seemed to have been repaired significantly due to the consistent supply of quality products and the subsequent strong technical support from SM, SC still possessed some doubts about SM’s ability regarding new product development and reliability (of new products). That is, *“competence trust was not completely repaired (at least slightly lower than the pre-transgression phase), because SC had been harmed”* (Sales Engineer 1, distributor, case 4). Further observations regarding SC’s post-repair competence trust in SM revealed that it had become more *“alert and vigilant to any variations in the yield rate of their production lines”* (Senior Purchasing Manager, buyer, case 4). In particular, *“such vigilance is reflected in potential increases in the number of verification tests conducted and the criteria involved”* (Senior R&D Engineer, buyer, case 4).

Goodwill trust: downward recalibration

SC’s goodwill trust in SM *“[...] had only repaired up to 70 – 80%”* (Senior R&D Engineer, buyer, case 4). One factor could be that the trust violation and repair had reinforced the belief that a concern over DAF reliability was not entirely attributed to SM’s competence, for it was partly deemed to be due to the limited capabilities and resources SM spared to fulfil SC’s requirements. Thus, *“SC became more cautious and careful. They would not trust SM’s*

products unconditionally” (Sales Engineer 1, distributor, case 4). Another important explanation is that “*SM’s technical capability might have improved, but their goodwill was only recovered by 80%, since it did harm SC’s financial welfare across the year 2015*” (Sales Engineer 2, distributor, case 4). The whole trust repair process indirectly affected the trust (competence) MT placed in SC. After the incident, “[...] *many product categories running between MT and SC [...] that could originally be produced had been pended*” (Sales Engineer 1, distributor, case 4). He continued that “*it had been a tough year for SC. This disruption was, in fact, the most severe error between SC and SM*” (Table 4-16). Hence, “*the mode of collaboration might have been somewhat adjusted. It required some time to recover the inter-organisational relationship. It was unlikely that we would ‘hold hands and continue like nothing happened’*” (Purchasing Agent, buyer, case 4).

	2017	2016	2015	2014
<i>Sales/Revenue</i>	\$337 mil	\$313 mil	\$283 mil	\$358 mil
<i>Net Income</i>	\$24 mil	\$15.7 mil	\$5.1 mil	\$31.3 mil
<i>Net Income Growth</i>	52.27%	206.80%	-83.61%	171.71%

Table 4 - 16. SC’s annual financial performance (Ft.Market.com accessed in 2018)

CHAPTER FIVE: CROSS-CASE ANALYSIS

INTRODUCTION TO THE CHAPTER

This chapter presents the cross-case analysis that identifies similarities and differences drawn from the within-case analysis. The chapter is structured into three sections with respect to different temporal orientation. That is, section 5.1 addresses the dynamics of trust violation and factors affecting the process. Next, section 5.2 elaborates upon the characteristics of the positive turning point. Last, section 5.3 explains the dynamics of trust repair in relation to goodwill and competence trust with corresponding factors identified from the case findings.

5.1 THE DYNAMICS OF TRUST VIOLATION

To address research question 1, the temporal orientation of the emergence, development, and escalation of a transgression(s) is unpacked with respect to the effect of violating competence and goodwill trust. The findings (*Table 5-1, p. 174*) have shown that a trust violation consists of multiple transgressions and corresponding ineffective reparative attempts. Specifically, trust violation from both cases 1 and 4 entailed four transgressions each, while that from case 3 consisted of six, with case 2 involving two. More transgressions implied a longer trust violation stage, because each typically progressed through four phases identified in the within-case analysis, namely discovery, resistance, intervention, and escalation.

In the discovery phase, in order for an incident to be perceived as a transgression, it should be firstly detected by the buyer that an incident has signalled unmet expectations. The data have shown that transgressions tended to be discovered by operating staff from the production line and quality control units: “GN’s [the buyer] found defective items when conducting sampling inspection from our incoming quality control” (Project Manager, buyer, case 2). Similarly, “our engineers reported a low yield rate from the production line and temporarily halted the production” (Senior R&D Engineer, buyer, case 4). As objective and measurable specifications become available from operational and functional levels, the buyer then forms a tentative attribution of the cause of the transgression to the supplier.

In the resistance phase, the buyer reports the transgression to the supplier and demands an explanation, solution, and penalties. Accordingly, *“the buyer [SC] reached out to the supplier [SM] trying to understand what was going on [...] SC also requested compensation from the supplier for the loss incurred”* (Sales Engineer, distributor, case 4). However, the supplier did not simply accept what the buyer asked for, but rather, tended to gather information to reduce their culpability in an attempt to shift the root cause on to the buyer and/or external factors, at least partially. For example, in case 2, the supplier *“explained that not only had IE experienced difficulties in the RoHS transition [...] other PCB manufacturers were also struggling [...] two peer firms shut down [...] high uncertainty and limited knowledge about RoHS in the industry”* (General Manager, supplier, case 2). Similarly, in case 4, the supplier told the buyer that *“we did mention that the parameter for M3 (die attached film material version 3) should be very similar to the previous version (M2). But we did clarify that this material was still in the trial run and I suggested for them to apply it on dummies first”* (Sales Engineer 2, distributor, case 4). The disagreements caused resistance from the buyer and the supplier to verify and counter-verify the cause of the transgressions during the dyadic negotiation and interaction. The buyer then downgraded the supplier’s trustworthiness having now acquired the evidence substantiating the transgression. For example, in case 4, the buyer found out that the root cause was the unauthorised change made to the specification of the final product, because the supplier had *“attempted to solve other customers’ technical issues together in one go without explicitly informing the buyer [...] it is unacceptable”* (Senior Purchasing Manager, buyer, case 4).

In the intervention phase, once the buyer and the supplier have agreed upon the cause of transgressions, the buyer and/or the supplier could intervene and obstruct the trust violation by initiating reparative attempts to contain and even repair the violated trust. The supplier may offer explanations and commit to paying compensation to demonstrate its trustworthiness and repentance. Besides which, the supplier could also deter future occurrences by strengthening its quality control and incorporating operational adjustments. For instance, *“we [the supplier] had tried our best to match their [the supplier] requirements by tightening OQC and conducting post-production manual adjustments”* (Sales Manager, supplier, case 1).

The case findings have revealed that there was always a ‘gap’ after each transgression between the dyad. To elaborate upon this, this finding suggests that there was inevitably a discrepancy between what the buyer expected regarding reparative attempts signalled by the supplier (the expected outcome) and what it actually received (the perceived outcome). For

example, Table 5-1 (p. 174) shows that most of the early transgressions were not effectively dealt with, because they were treated as day-to-day tasks, by which firms “*handle many supply chain glitches and conflicts regarding delivery, quality, and price on a regular basis*” (General Manager, buyer, case 2). This means, insufficient resources were invested in resolving early transgressions by both parties, for they tended to address these with standard responses (e.g. standard operating procedures specified in the contract).

As a result, across all cases, these standard responses could only effectively contain or eliminate the cause of the transgression (e.g. tightened QA/QC, the provision of compensation, and manual calibrations). Moreover, those ineffective and unsatisfied reparative attempts increased the probability of subsequent transgressions, because the causes remained latent (due to failed reparative responses), which could be reactivated by other transgressions in the future, thus resulting in severe complications. In addition, the increasing number of ineffective reparative attempts also “*resulted in incremental time and resources over time*” (General Manager, supplier, case 2), which led to “*impatience and upset [of the buyer] about the supplier’s lack of initiatives*” (Senior R&D Engineer, buyer, case 4).

In the escalation phase, after a series of transgressions with ineffective reparative attempts, this gradually resulted in the buyer’s goodwill and competence trust ebbing away, whilst the supplier became increasingly reticent to the demands put on it. Not only did the buyer increase its defensive mechanisms by, over time, applying stricter quality, delivery requirements and increasing penalties on the supplier, for the supplier also felt that the former was unreasonably exploiting their interests, which was putting a greater burden on its operations. For example, in case 1, the buyer adopted stricter inspection criteria and “*demand[ed] the supplier’s FAEs and QA staff come along with the delivery to the buyer’s factory, so that their staff could carry out on-site sorting and reworking, if any defect was spotted at IQC*” (Director of Supplier Management, buyer, case 1), which significantly increased the supplier’s costs. That is to say, as the perceived gap became larger through a series of transgressions and reparative failures, this, over time, created a negative spiral that violated trust at a faster pace and eventually led to a deadlock.

Notably, the findings have shown that the transgression that causes a deadlock between the buyer and the supplier may well not be the most severe one, but “*it served as the final straw that broke the camel’s back*” (Senior Vice President, buyer, case 2). This implies that the process of how both parties managed the previous transgressions was to blame. In case 3, the final transgression, intentional order pending, was in fact caused by the buyer’s decision

to blacklist one of the supplier's major suppliers from the previous transgression. Hence, the supplier's production capacity was significantly lowered, thereby affecting subsequent deliveries. In cases 1 and 2, the supplier's reparative attempts only partially constrained the root causes of transgressions through stricter QC and clear classification. Such reactive rather than prevention actions were not sufficiently robust to deter future transgressions and also, not sustainable due to unbearable cost. So, the supplier eventually caused idleness to the buyer's production line, which resulted in delays to the downstream customers later on in the trust violation stage.

This subsection has elucidated upon the cumulative effect of transgressions and ineffective reparative attempts on trust violation. The following one explains the factors that affect the severity of trust violation.

	Case 1 (GT – GN)	Case 2 (IE – HE)	Case 3 (AE – AC)	Case 4 (SM – SC)
Initial transgression	Cause: missing tapping along with workstations that was discovered by the buyer’s IQC. Type: competence Locus: internal Severity: moderate	Cause: a series of product contaminations on IE’s PCBs was reported by HE’s a downstream customer. Type: competence Locus: external Severity: low to moderate	Cause: AE arbitrarily shifted engineering resources for AC to other AC competitors without authorisation. Type: integrity Locus: internal Severity: moderate	Cause: SM made changes to the product without authorisation, which caused IC breakage to a whole batch of chips from SC’s downstream customer (MT). Type: integrity Locus: internal Severity: moderate
Reparative attempt (supplier)	Response: GT tightened their OQC and IPQC; GT conducted manual adjustment after production. Outcomes: buyer’s expectation was not fully met, because the transgression had still reoccurred occasionally (non-preventive).	Response: IE explained the root cause; IE tightened up their quality control by adopting a new labelling system Outcome: HE’s expectation was not effectively fulfilled, because the responses were not preventive.	Response: AE did not clearly explain and address the transgression. Outcome: AC did not accept the responses and complained vigorously.	Response: SM refused to take the blame, but rather, accused SC of reckless adoption of the samples (as SM did recommend SC to test on dummies first); SM conducted root cause analysis; SM agreed to conduct an improvement action plan. Outcome: SC had argued constantly over compensation but did not get it.
Transgression 2	Cause: the presence of iron filings on the surface of stamping components was discovered and cautioned by GN. Type: competence Locus: internal Severity: low	Cause: incidents of PCB delamination and resulting delays caused to HE’s production. Type: competence Locus: internal Severity: moderate to high	Cause: AC’s project was terminated prematurely after the mass production phase due to AE’s technical incapability of solving IC incompatibility. Type: competence Locus: internal Severity: high	Cause: an updated material (M3a) was developed, which not only failed to solve the original issue, but also caused new issues. Type: competence Locus: internal Severity: low
Reparative attempt (supplier)	Response: GT tightened their OQC by allocating more QA and QC staff at the end of the production process. Outcome: GT did not eliminate the cause but did effectively contain the issue.	Response: compensation offered; root cause explained; proposal of permanent solutions offered. Outcome: HE turned down IE’s proposal, because of the concerns over costs and technical unfamiliarity	Response: AE allocated 30% extra manpower to conduct technical support (root cause investigation), sorting, rework, and production; AE paid a large amount of compensation after a lengthy negotiation. Outcome: AC’s expectation was not met.	Response: SM explained the root cause; SM agreed to develop a new sample shortly; SM suggested new parameters for SC to try. Outcome: SC thought that SM was not responsive and thought their development process was sloppy.
Transgression 3	Cause: incidents of different surface issues (unevenness, bumping, and scratches) were discovered by GN. Type: competence Locus: internal Severity: low to moderate		Cause: incidents of battery explosion were reported by the user. Type: competence Locus: external Severity: low	Cause: the updated material (M3b) was developed, which not only failed to solve the original issue, but also caused new ones. Type: competence Locus: internal Severity: low to moderate
Reparative attempt (supplier)	Response: GT tightened their OQC by allocating more QA and QC staff at the end of the production process; GT put extra care into transportation and changed the carrier; GT attempted to adjust the tooling. Outcome: GN was not satisfied with the responses, because the issues still reoccurred.		Response: AE explained with evidence that the issue was caused by misbehaviour of the end user. Outcome: AC’s expectation was not fulfilled, because it was not satisfied. And AC wanted to hold AE accountable.	Response: SM showed technical reports and analysis to justify the manufacturing process; SM agreed to develop a new sample soon. Outcome: SC started to become impatient about SM’s solutions.
Transgression 4	A request to terminate the exchange after all the tooling was invested at GN’s expense Type: integrity Locus: internal Severity: moderate		Cause: incidents of capacitor explosion were reported by the user. AC accused AE of withholding a critical technical report from it. Type: competence and integrity Locus: internal Severity: moderate	Cause: the updated material (M3c) was developed, which still did not fix the issue. At the same time, SC’s downstream customer (MT) was affected. Type: integrity Locus: internal Severity: high
Reparative attempt (supplier)			Response: AE explained that their capacitor supplier reported that the defective sample went missing; AE offered an extensive technical report and analysis to convince AC; AE widened the tolerance of its design; AE incorporated multiple foolproof stops in the production. Outcome: AC’s expectation was not fulfilled, because it was not willing to accept the explanation.	
Transgression 5		Cause: AC discovered that an agreed material applied on AE’s PCB fabrication was stolen Type: integrity Locus: internal Severity: high		
Reparative attempt (supplier)		Response: AE agreed to accept compensation of \$20 million; AE set up interlock meeting; contractual terms and conditions were changed such that stricter requirements on AE’s transportation, packaging, and manufacturing process were imposed; AE added more checkpoints to design and production. Outcome: AC’s expectation was only partially fulfilled and it warned AE that with one more transgression, the business relationship would be terminated.		
Transgression 6		Cause: AC believed that AE had intentionally pended their orders Type: integrity Locus: internal Severity: moderate		

Table 5 - 1. A cross-case comparison of multiple transgressions and corresponding reparative attempts

5.1.1 Factors driving the severity of trust violation

From the data, four major factors that drive the severity of trust violation, namely supplier reactions, cross-domain failure, types of transgression, and their locus, have been identified (Table 5-2). The former two pertain to the overall transgressions in the trust violation stage, while the latter two refer to the initial transgression. The findings have also shown that the initial transgressions had a bearing on the overall dynamics of trust violation.

Supplier reactions

As elaborated upon in the previous subsection, a trust violation is inherently a process of multiple transgression and reparative attempts. Hence, the reactions signalled by the supplier largely determined the effect of reparative attempts. Whilst the findings have revealed that these attempts were often ineffective in nature, the suppliers from cases 1 and 2 demonstrated more proportionate reactions to resolve transgressions. For example, in case 2, the respondents noted that IE (the supplier) “*had communicated fully with the buyer regarding any issues that HE was experiencing and would be experiencing [...] IE discussed the disruptions openly with the buyer regarding what both parties should do about it*” (General Manager, supplier, case 2). Similarly, in case 1, the supplier “[...] *spent more resources on fixing the issues [...] but did not add any more costs to the buyer’s total manufacturing expenses*” (General Manager, supplier, case 1).

In contrast, both cases 3 and 4 showed less proportionate reactions in the event of transgressions. That is, the suppliers did not invest similar effort in solving the transgressions, like with cases 1 and 2. For example, from case 3, a respondent noted: “*we should have resolved transgressions with solid execution and actions, but we thought 70 – 80% efforts should be acceptable [...] with our resource prioritisation*” (Executive Vice President, supplier, case 3). Thus, the supplier had not satisfactorily met the buyer’s expectations, transgression after transgression. As the trust violation progressed, such ineffective reparative attempts had intensified the buyer-supplier relationship, resulting in a high severity of trust violation.

Case	The severity of trust violation				Transgression-specific factors						Relationship-specific factors											
					Overall transgression				Initial transgression													
	Goodwill trust violation		Competence trust violation		Cross-domain failure	Supplier reaction (proportionality)	Number of transgressions	The length of trust violation (in months)	Type of the initial transgression	Locus of the initial transgression	Interdependence		Buyer dependence		Supplier dependence		Relationship expectation		The initial level of goodwill trust	The initial level of competence trust	Scale of collaboration	
1	Low	3	Moderate	3	No	2	4 (competence, competence, competence, integrity)	1	Competence	External	Unilateral	4	Low	4	Low to moderate	4	Growth	1	4	4	Low	4
2	Low	4	High	2	Yes	1	2 (competence, competence)	1.5	Competence	External	Bilateral	1	Moderate	3	High	1	Static	2	1	2	Moderate	3
3	High	1	High	1	Yes	3	6 (integrity, competence/integrity, competence, competence/integrity, integrity, integrity, integrity)	6	Integrity	Internal	Bilateral	2	High	2	Moderate to high	2	Decline	3	2	3	High	1
4	High	2	Moderate	4	No	4	4 (integrity, competence, competence, integrity)	2	Integrity	Internal	Unilateral	3	High	1	Low	3	Decline	4	3	1	Moderate to high	2

Table 5 - 2. A cross-case comparison of the effect of transgression- and relationship-specific factors on the severity of trust violation

It should be noted that the supplier reactions would not always be active and positive. In particular, they tended to wear off over time as the number of transgressions increased. As mentioned previously, there was always a gap between expected and received reparative attempts, which would accumulate and widen after each transgression and each ineffective reparative attempt. The buyer had gradually lost its positive perception of the supplier's competence and goodwill, which translated into more restrictive and punitive clauses being imposed on it to protect its interests. As a result, the supplier tended to experience additional difficulties when striving to fulfil the buyer's requirements. For example, in case 1, the supplier had eventually become overwhelmed by the buyer's continually increasing quality requirements, which significantly drained its financial and operational resources: *"over time this had become a huge burden to our operations and costs"* (General Manager, supplier, case 1). At a certain threshold, the relationship shifted from cooperative to competitive, because of perceptual asymmetry in which the buyer expected more and at the same time the supplier started to feel pain. This further exacerbated the supplier's resistance.

In both cases 3 and 4, the supplier's resistance to the buyer's requirements was higher due to relationship dependence. For instance, in case 4, the supplier did not want to invest more resources to improve, because it suspected that the buyer did not spend the resources required to collaborate with the new formula. The supplier even suspected that the buyer was engaging in opportunism, as a respondent from SM noted: *"[...] even if we offered them better products, these products may still fall short of their expectation. [...] Assuming you are in a kitchen, if your chef is lacking capabilities required, even if I offer you the best ingredients, you cannot produce any decent dishes [...] was it because of their lack of manufacturing capability, modifications to the parameters, or engagement of certain opportunism related to cost reduction? We were not sure"* (Product Engineer, supplier, case 4). Hence, if the supplier reacted in a resistant manner, this was directly reflected in the quality of its following reparative attempts and exacerbated the severity of trust violation, thus pushing the relationship towards deadlock.

Cross-domain failure

With respect to the evidence of multiple transgressions, if these broke out across relatively different functions and departments, it could cause cross-domain failures. For example, in case 2, the buyer had gradually come to doubt the supplier's QC, QA, manufacturing process,

knowledge about RoHS, cost management, and supplier management in the trust violation stage. Likewise, case 3 displayed a similar pattern in which the buyer had, over time, discounted the supplier's expertise in multiple domains, including procurement, technical design, the manufacturing process, lab certification as well as essential knowledge about ICs and frequency interference. The buyer escalated the trust violation after the affected domains had spread across different functions and business units (e.g. from commercial PCs to consumer laptops). In contrast to case 3, in case 1, transgressions were characterised by the homogenous nature in which most of them fell within product appearance issues, such as excessive iron filings, missing tapping, and surface deformation. In case 4, in spite of the occurrence of multiple transgressions, they took place for a single product category with a specific function (i.e. the development of die attached films).

The effect of cross-domain failures fundamentally threatened the value of buyer-supplier relationships, because they inherently indicate that the supplier is perceived to lack the ability to fulfil the buyer's expectations across multiple operational functions. For example, in case 3, the respondents noted: "*AE [the supplier] had been shown to be incapable in the collaboration between R&D and production [...] cost management and procurement issues*" (Deputy Executive Officer, buyer, case 3) and "*over six months from the initial transgression to the point that we had no reason to trust them and were about to quit*" (Senior Vice President, buyer, case 3). Thus, the domain of the transgressions significantly predicted the severity of the trust violation.

The type of the initial transgression

The findings have shown that the type of the initial transgression had an effect on the dynamics of trust violation. Those from cases 1 and 2 were characterised by pure competence-based transgressions (i.e. missing tapping over workstations in the manufacturing process and product contamination caused by incomplete RoHS adaption), while those from cases 3 and 4 were perceived to be largely integrity-based ones (i.e. unauthorised shift of engineering resources to other projects of the buyer's competitors and unauthorised change to the specification of the agreed material) (*Table 5-1*).

The data showed that transgressions tended to be initially attributed as competence-based, because they needed to be discovered to have exerted a negative effect on performance through objective measures (e.g. yield rate, quality standard, and on time delivery). However,

some initially perceived competence-based transgressions were, over time, revised as being integrity-based ones, because more information became available when the buyer began to investigate the cause of the transgressions. That is, the findings revealed that integrity-based transgressions generally took more time to discover than competence-based ones, because those objective measures specified on the contract did not reveal anything about the supplier's intentions, thereby making it more ambiguous and difficult to verify. When the buyer continued to investigate the cause further after the discovery phase, the supplier that engaged in integrity-based transgressions tended to withhold relevant information in the resistance phase to avoid being accused of acting opportunistically or deliberately wishing to harm the buyer.

It should be noted that the supplier tended to justify the transgressions induced by it as being less severe and based on strategic arrangements. In case 3, the supplier claimed that the shift of engineering resources was a reasonable move, because the buyer had not been performing as well as other competitors in terms of order volume at the time. Hence, it thought that the reallocation of resources was a justifiable strategic decision even it meant certain compromises on the efficiency to fulfil the buyer's needs. The Executive Vice President of the supplier argued that: "*the total resources of a firm were limited [...] AE [the supplier] could only optimise it in accordance with the buyer's strategic importance*". Similar explanations can be drawn from case 4. In terms of the priority of conducting the material change, the 1st tier plant requirements took precedence over 2nd tier buyers. The purchasing volume determined why the supplier only allocated limited resources to the buyer, as one respondent noted: "*the buyer had to find a way to adapt to the new material in the future no matter what [...] the supplier would not particularly care about the 'feelings' of a 2nd tier buyer [due to interdependence]*" (Associate Vice President, distributor, case 4). The supplier and the distributor both agreed that the decision was made based purely on economies of scale to purposefully lower the supplier's R&D and production costs. Thus, this calculative thinking seems to have prevailed regarding the supplier's decision making, which overshadowed its concerns for the buyer's interests. Consequently, the supplier's strategic considerations and the resulting reduced resource allocation were held accountable as the causes of the integrity-based transgressions that undermined the goodwill trust, as perceived by the buyer.

In terms of the severity of the type of transgressions, competence-based ones were perceived to be less severe compared to integrity-based ones, because initial competence-based transgressions were likely to be treated as regular operational issues, which did not

engender intense perceptual distress. This is not only because the buyer encountered and dealt with supply chain disruptions on a regular basis, but also, because the buyer tended to be quite confident about its assessment of the supplier's technical capabilities (via ex-ante and periodic surveys). Regarding which, the buyer tended not to question the fundamental ability of the supplier to fulfil the expected tasks: *"we [the buyer] believed that the supplier had what it took to pass the transition from lead to lead-free production successfully based on the audit conducted prior to the transgression"* (Senior Purchasing Manager, buyer, case 2). This perception was reinforced, because the competence assessment on approving the supplier was so comprehensive: *"it is quite difficult to be certified as our approved vendor [...] need to pass 12 operational dimensions [...] generally took more than six months to audit"* (Senior Purchasing Manager, buyer, case 3). This means that early transgressions associated with competence did not challenge the fundamental capability of the supplier as perceived by the buyer. The buyer tended to be more forgiving towards the transgressions and believed that the supplier would be capable enough to handle them (reparative attempts) efficiently and effectively.

In contrast, integrity-based transgressions were perceived to be an unwelcome surprise from the buyer's perspective, whereby their unprecedented nature really shocked the buyer and it was unprepared for the more severe financial losses that accompanied the transgression. For example, in case 4, *"SC [the buyer] at the time placed high trust in SH [the distributor] and SM [the supplier]"* (Associated Vice President, distributor, case 4). As a consequence, the buyer demonstrated significant distress by expressing: *"SM did not fulfil our expectation to inform and communicate technical specifications and the product phenomena candidly and fully. This kind of behaviour was totally unacceptable for a supplier in any business model"* (Senior Purchasing Manager, buyer, case 4). In addition, integrity-based transgressions are particularly more damaging to relationships with higher prior trust. They tended to exert more severe reactions: *"you said that this sample would fix the issue and we trusted in you [...] why did it fail after we applied it to the production?"* (Sales Engineer 2, distributor, case 4) and *"We were wondering why SM would make something that was totally not applicable to us [...] and deliver that to us"* (Senior Purchasing Manager, buyer, case 4).

The locus of the initial transgression

The locus of transgressions essentially indicates which party is to blame for the negative outcome resulting from the transgression. Transgressions with an internal locus appear to be more severe than those with an external one. Across the four cases, the initial transgressions in both cases 1 and 2 were perceived to be of an external locus (*Table 5-1*). In case 1, the buyer admitted that the cause of the transgression was partially attributable to the early development of the product category. That is, since GPS navigators for automotive OEM had been in their burgeoning stage, not only did the buyer adopt a ‘learning by doing’ approach at that time, for it also wanted to reduce time-to-market, which resulted in several revisions and adjustments to the design specifications. Whilst in case 2, the cause of the initial transgression was attributed to the introduction of RoHS enacted by both downstream customers and the government, which was perceived as being somewhat external to the supplier. In contrast, in both cases 3 and 4, the cause of the initial transgressions was mainly perceived to be internal to the supplier. In case 3, the initial transgression was primarily induced by the supplier’s arbitrary shift of committed engineering resources. In case 4, the initial transgression was caused by the unauthorised technical changes made to the product, which were different from the specifications the supplier presented.

The four factors identified above have been shown to affect the severity of the trust violation differentially. Specifically, these factors do not have an identical influence on competence and goodwill trust. In the next subsection, the differential effects of these factors on the two trust dimensions are presented.

5.1.2 Factors driving differential effects of competence and goodwill trust violation

The data suggest that the four transgression-specific factors (i.e. supplier reactions, cross-domain failure, the type and the locus of the initial transgressions) violate/buffer competence or goodwill trust in specific ways. This subsection describes how these four factors affect the two trust dimensions (*Table 5-3*).

Antecedents	Factors	Competence trust	Goodwill trust
<i>Relationship expectation</i> <i>Scale of collaboration</i> <i>Shadow of the past</i>	<i>Supplier reaction</i>		•
<i>Interdependence</i>	<i>Cross-domain failure</i>	•	
<i>Shadow of the past</i>	<i>The type of the initial transgression</i>		•
	<i>The locus of the initial transgression</i>		•

Table 5 - 3. An overview of the factors that exert differential effects on competence and goodwill trust

Supplier reactions

Supplier reactions, manifesting themselves in the proportionality of reparative attempts during the trust violation, were found to affect the violation of goodwill trust. With less proportional reactions being afforded to reparative attempts, the gap tended to widen over time after every transgression and the corresponding unsatisfactory reparative attempt. This created a negative spiral, which increased costs and resources to both the buyer and the supplier as well as expanding operational loopholes due to ineffective and non-preventive reparative attempts. The negative spiral gradually reached a threshold, where the buyer and/or the supplier perceived ‘enough is enough’, when one or both parties were likely to give ‘last chance’ signals. This threshold is characterised by i) the intolerable operational difficulties faced by the supplier, where the buyer’s progressively heightened restrictive and punitive clauses (e.g. stricter delivery and quality criteria, constraints over the supplier’s suppliers, and increased penalties) posed a heavy burden to the supplier’s manufacturing and production, thus impairing its ability continuously to deliver at a satisfactory level; and ii) the losses experienced by the buyer after a series of transgressions and unsuccessful reparative attempts caused more rigorous reactions (e.g. reduced orders and switching suppliers).

The perceived discrepancy is mutual, because the buyer expects the supplier to do more while the supplier starts to feel pain. As a result, the supplier began to discount and dispel the perceived value of the relationship by filing a request to quit (case 1), claim the need for

changes of materials to reduce its manufacturing burden (case 2), or reduce the capacity dedicated to the buyer (cases 3 and 4). Such counterbalancing reactions were perceived to harm the buyer's goodwill trust, because they were targeted at transferring the buyer's interests to the supplier (Table 5-4).

Case	Supplier reactions	Exemplary quote
1	The supplier signalled intentions to quit	<i>"After the relationship had further deteriorated, GT suggested that if this was to be the case for future business, they would like to quit"</i> (Director of Supplier Management, buyer, case 1)
2	The supplier decided to transfer the costs to the buyer by filing a request of a material change	<i>"If we need to convert to lead-free production permanently, we simply need to adopt better materials in manufacturing [that would accommodate tougher manufacturing processes]. This means that it would be reflected in an increase in costs [the buyer had to bear]"</i> (General Manager, supplier, case 2)
3	The supplier became less responsive	<i>"[...] AE had been unresponsive and unwilling to make sacrifices compared to our other ODMs. [...] after we imposed some punitive measures and raised stricter requirements on AE, their position was a bit tough. In fact, they were still unable to achieve our expected standards for guaranteeing future orders. But, compared with other ODMs, our bargaining power was relatively small with AE (due to dependence), so they continued to receive sizeable orders"</i> (Senior R&D Engineer, buyer, case 3)
4	The supplier gradually reduced resources allocated on the buyer	<i>"We [SM] believed SC might have engaged in opportunism, such as cost reduction or simply did not have the engineering capabilities necessary for the adaptation"</i> (Product Engineer, supplier, case 4) <i>"The supplier [SM] thought that the distributor [SH] should have stepped in, clarified the situation, and coordinated with the buyer [SC], because SM believed that SH should have maintained a good relationship with SC. SH should not have let SC constantly claim for a compensation and argue with SM. They were fed up with that"</i> (General Manager, distributor, case 4)

Table 5 - 4. An overview of the counterbalancing reactions signalled by the supplier

Cross-domain failure

Cross-domain failures had an effect on competence trust violation. The findings suggest that transgressions that occurred in a single-domain were perceived to be less impactful on the buyer's competence trust in the supplier. Such domain failures tended not to threaten the fundamental value of buyer-supplier relationships, which refers to the expectation of the supplier's ability to fulfil the buyer's requirements. This is because the supplier had other domains of competence to leverage the affected one. Thus, the buyer tended to be more forgiving, offering the supplier an opportunity to improve. For example, the buyer from case 1 noted: *"We reckoned that this supplier did have great technical know-how. The only doubt we had was in their process management and quality control [...] if they were willing to do something, such as investment or improvement [...] they'd really got what it takes to manufacture for us without any problems"* (Director of Supplier Management, buyer, case 1). Likewise, a respondent from case 4 suggested: *"SM is, in fact, the number one supplier for semiconductor materials [...] if they could not solve the technical issue [related to DAF], it was most likely other firms could not too"* (General Manager, distributor, case 4). This could mean that the buyer had still exchanged many unaffected products and projects with the supplier, which significantly buffered the supplier's overall competence.

In contrast, if transgressions had gradually extended from one domain to multiple ones, the buyer would seriously question the supplier's overall competence and vacillate between keeping or quitting the relationship. For example, in case 2, the buyer *"[...] was getting very nervous about whether the supplier could pull it off [RoHS] successfully"* (General Manager, buyer, case 2) after multiple domains were affected and the buyer started to benchmark the performance of other alternatives available. Similarly, in case 3, the buyer *"[...] spared some orders [that originally were given to AE] to their affiliated company, HC. [...] because we could not trust [AE's inability to fulfil AC's expectations] them anymore and were about to quit"* (Senior Vice President, buyer, case 3).

The type of the initial transgressions

The findings reveal that the type of the initial transgression had an effect on goodwill trust. Competence-based transgressions did not significantly affect it, because the transgressions

were attributed to the supplier's capability rather than intentions to fulfil the buyer's expectations. In contrast, integrity-based transgressions resulted in a significant goodwill trust violation, because these directly implied deficiencies in the supplier's motives, characters, and intentions, thereby signalling that the supplier was not demonstrating genuine care for the buyer's interests. In fact, it is more complicated than this given the different perspectives held by the buyer and the supplier.

The data revealed that integrity-based transgressions are generally associated with higher severity (e.g. larger financial losses and reputational damages) and ambiguous evidence than competence-based ones. The suppliers tended to try their best to shift the blame to external actors (e.g. the buyer, upstream suppliers, or downstream customers) in order to avoid any penalties. Hence, the supplier intentionally brought ambiguity to the cause of transgressions. For example, in case 4, a respondent mentioned: *"when engineers conducted failure modes and effects analysis, they would sometimes emphasise things that were not the root causes in an attempt to divert the buyer's attention at certain critical moments [...] it depends on how engineers presented and interpreted the analysis and how much the buyer would like to believe it. The engineering department sometimes does that"* (General Manager, distributor, case 4). Likewise, in case 3, *"the supplier [AE] shifted the blame of the cause [of the transgression] to their IC supplier, Tsinghua Unigroup, because ICs manufactured by it had been less stable [under-specification]"* (Senior Vice President, buyer, case 3).

From the buyer's perspective, the buyer firmly believed that the existing contract would correctly identify competence-based violations, but not integrity-based ones and contained the losses within an acceptable level of severity. Thus, if a transgression caused significant reputational and financial damage, the buyer tended to hold the supplier's goodwill accountable in the first place rather than purely doubting its competence (i.e. assumed integrity-based transgressions). For instance, in case 4, the buyer attributed the initial transgression to being integrity-based, because it believed that with the supplier's competence (as being a market leader) such a sudden reduction to the yield rate caused by a product would be very rare. So, the buyer perceived that the fundamental cause of the violation should be with the supplier's intentions. In sum, because of the ambiguous and high severity nature of integrity-based violations, the buyer is more likely to attribute the cause to the supplier's goodwill.

When the initial transgression was verified as an integrity-based transgression, the buyer's suspicion regarding the supplier's intentions tended to last and overshadow the

subsequent trust violation process. For instance, in case 3, after the initial integrity-based transgression, *“we felt that the supplier had a tendency to shift engineering resources across projects, especially those competent engineers [...] at the same time they seemed to perform quite well with our competitors, in terms of quality and costs [...] so we knew that the supplier was not incompetent, but they were just not willing to place importance on our projects”* (Senior Vice President, buyer, case 3). This meant that integrity-based transgressions convinced the buyer that the supplier might not be as willing to take care of its interests. Such blame of the supplier’s goodwill tended to have a lasting effect, as the buyer tended to attribute later competence-based transgressions to the supplier’s goodwill. This undermined goodwill trust, which in turn, mitigated the severity of competence trust violation.

The reason why the type of the initial transgression did not have an obvious effect on competence trust is because this type is more sensitive than goodwill trust. That is, it is affected by any emerging disconfirming evidence of the supplier’s performance. This suggests that, integrity- and competence-based transgressions both lead to the violation of the competence trust of the buyer, while only integrity-based transgressions contribute to the violation of its goodwill trust.

The locus of the initial transgressions

The buyer tended not to hold the supplier’s intention accountable, if the initial transgressions were with an external locus. One with an external locus appeared to limit the buyer’s tendency to hold the supplier’s goodwill accountable during the trust violation stage, as happened in cases 1 and 2. In contrast, the buyers from cases 3 and 4 significantly lowered their goodwill trust placed on the supplier, because they attributed full culpability to the supplier. In case 2, the buyer’s *“downstream customer actually understood the cause [of the transgression] when RoHS was firstly introduced”* (Senior Purchasing Manager, buyer, case 2). The external locus of the transgression not only avoided any concern about the supplier’s goodwill, but it also minimised the damage perceived by the buyer. Whereas in case 4, the buyer perceived that *“SM did not fulfil our expectation of them to inform and communicate product phenomena candidly and fully. This kind of behaviour is totally unacceptable for a supplier in any business model”* (Senior Purchasing Manager, buyer, case 4). The internal locus of the transgression affected the supplier’s goodwill, whilst also engendering emotional distress.

It should be noted that the mitigating effect of the external locus tended to wear off over time, because the cause of transgressions could gradually change from the initial transgression per se to multiple ineffective reparative attempts. For example, in case 2, the buyer had still encountered related RoHS-induced transgressions (e.g. reduced yield rate and product contamination) as the enforcement of RoHS progressed and began to treat those transgressions as being of the internal locus (e.g. a lack of effort in devising effective reparative attempts by the supplier).

A brief summary of this section

Thus far, this section has delineated the process of how a series of transgressions and their corresponding reparative attempts construct the overall dynamics of a trust violation. The four factors that specifically shape the violation of competence and goodwill trust, respectively, have also been explained. The outcome of trust violation is deadlock of the inter-organisational relationship. The next section describes how the deadlock is resolved (i.e. the positive turning point) by prompting the initiation of effective reparative responses.

5.2 POSITIVE TURNING POINT

The case findings revealed that a positive turning point is actually a phase, rather than a point, starting from a deadlock resulting from a trust violation to the point where the buyer and/or supplier initiated reparative responses. For the sake of simplicity and coherence, the term, positive turning point, is still used in the following.

At the positive turning point, trust remained latent and constant at its lowest, because misaligned expectations and increased conflict of interests from the deadlock created both physical and mental separation between the buyer and the supplier. For instance, in case 3, the buyer “[...] cancelled all of the orders placed with AE, because it had accumulated three red flags [after causing a series of disruptions]. The buyer gave up assistance and guidance on devising solutions together with AE [...] AE had to figure the issue(s) out itself [...] the business was on the fringe” (Senior Vice President, buyer, case 3). Whilst such separation constrained both parties from engaging in any actions across organisational boundaries, it also allowed them to ‘cool down’ and to reconsider the value of the buyer-supplier relationship.

Case	Buyer	Supplier	Initiation
<i>1</i>	Requirements from the downstream customer were yet to be fulfilled, because the product (automotive OEM) was still in its introduction phase. The tooling created on an expense that the buyer had yet to pay back. Other potent alternatives available would not be as cooperative as the current supplier.	The supplier wanted to leverage the buyer's reputation to other customers (strategic value).	Buyer led
<i>2</i>	The buyer intended to seek other alternatives as backups, but many PCB manufacturers also struggled to comply with RoHS production and some were reported to engage in opportunism.	The supplier was afraid that they would go out of business owing to slow and failed technical adaptation. The supplier could not let the buyer down because the latter accounted for over 70% of its overall sales.	Supplier led
<i>3</i>	The buyer transferred orders to its affiliated manufacturer, HC, but it did not have the capacity that the supplier did have. The buyer decided to place orders for the new netbook with Quanta Computer, the supplier's major competitor.	The supplier was really concerned that their major competitor took the new important project that should have been given to the supplier. This triggered business threatening mindset.	Supplier led
<i>4</i>	The buyer was under pressure from its downstream customer, Micron Technology. The downstream customer had gradually lost their patience. The buyer was afraid that if it offended the supplier, it might not receive materials in the future.	The supplier took a 'leave it or take it' stance.	Buyer led

Table 5 - 5. An overview of the cost-benefit analysis

The findings suggested that this phase generally took between one to four weeks, during which both parties in the relationship undertook rational cost-benefit analysis (*Table 5-5*). The outcome of this would determine the level of motivation to repair the relationship or not. For example, in case 1, the buyer perceived that the multiple tooling created had not covered the manufacturing cost. The automotive OEM product was still in its introduction phase, such that the project was perceived as being less attractive to other alternative suppliers. This means that, even if the buyer acquired alternative suppliers, they would still not allocate the desired level of resources to the project. Thus, they might also encounter the same technical issues as the current supplier had. So, if the buyer had pursued this route it would probably have put in jeopardy its interests more than those of the supplier. Consequently, the buyer decided to initiate the contact with the supplier that signalled the beginning of the trust repair process. Similarly, in case 4, the supplier was the market leader, which accounted for a third of the overall market share in semiconductor materials and chemicals. The supplier was relatively passive in this phase, because “*when the new material has been successfully implemented across other large IC assembly plants (e.g. PTI) [...] while the buyer [SC] still has not successfully adapted to it. The downstream customer [MT] would just inform SC that, ‘well SC doesn’t want to cooperate, let’s just place its orders with PTI’*” (General Manager, distributor, case 4). Thus, the buyer would have been affected more than the supplier, if the deadlock continued.

In contrast, the deadlock threatened the survival of the business in both cases 2 and 3. Regarding which, in case 3, the supplier was extremely concerned about its diminishing market share that had been engulfed by its competitor. “*At this point, the difference between AE and Mega Computer [ME] was huge in terms of market share. The proportion of our orders only accounted for less than 30% of AC’s total volume, while ME occupied over 60%*” (Executive Vice President, supplier, case 3). A crisis mentality sprouted from the supplier, which in turn, reunited the interests from different departments. Thus, the supplier demonstrated a high degree of motivation to repair the buyer’s trust by engaging in exchanges.

It should be noted that future gains (the shadow of the future) were weighed more heavily than the deterrence of past losses (e.g. relational investment) in the dyad’s cost-benefit analysis. For example, in case 4, despite experiencing a significant financial loss caused by the supplier, the buyer had still been motivated to initiate the contact with the supplier, because it perceived that it still expected to engage in frequent exchanges with the supplier, given it was the market leader. In case 3, it is evident that the supplier was more concerned about

possible future gains, because the buyer had successfully expanded into a new market segment (netbooks) with the help of the supplier's major competitor. Thus, the past penalties and perceived exploitation were overshadowed by the buyer's promising prospects. Similarly, in case 1, both the buyer and supplier emphasised the potential future gains. The buyer wanted to diversify its market portfolio into the automotive OEM market, while the supplier took the buyer's project characterised by small-volume-large-variation only because of the latter's future prospects.

In addition to this, the case findings reveal that the severity of goodwill trust violation determined the length of the positive turning point. That is, this severity invariably implied how competitive the deadlock was characterised. The more interests being harmed by the trust violation, the more time the buyer and/or the supplier could rationally spend conducting a cost-benefit analysis, because the parties were still caught up by those transgressions and attempted to get each and every account squared. For instance, in cases 3, at this point, there were still some penalties unresolved, because "*we [the buyer] could not fulfil our agreed orders to our downstream customers. The incurred penalties would be passed onto AE [...] so we withheld AE's payment*" (R&D Engineer, buyer, case 3). Such arguments and tension that arose through previous transgressions took time to cool down.

During the positive turning point, the buyer and/or supplier had gradually shifted their focus from specific transgressions that occurred in the trust violation stage to the broader relationship. They began to revisit the reasons for and fundamental values of the relationship. It generated the momentum for the buyer and/or supplier to redirect the negative trajectory to a positive one, thus initiating the process of trust repair.

5.3 THE DYNAMICS OF TRUST REPAIR

This section elaborates upon the overall trajectory of the trust repair process across the four cases. It begins with basic descriptions of the trust repair stage, including the length and outcomes in comparison with trust violation stage (*Table 5-6*), followed by the general characteristics of the trust repair patterns identified in the within-case analysis.

Generally speaking, the data revealed that trust repair took longer than trust violation. That is, it took between four to twelve months to repair violated trust. In particular, the more severe the competence trust violation was (e.g. cross-domain failures), the longer period the dyad required to repair trust. The findings suggest that competence trust seemed to be more difficult to repair than goodwill trust. Moreover, the severity of a goodwill trust violation seemed not to have any connection to the length of trust repair. In fact, the length of trust repair was at least twice as long as the trust violation phase. As illustrated in the table below, cases 1 and 2 took over four times longer for trust to repair than to violate, while for cases 3 and 4, this was two times. This provides clear evidence that inter-organisational trust is easier to violate than to repair.

The data also showed that the two trust dimensions were repaired independently (and also interactively), with different reparative responses being enacted by the buyer and supplier. This means that competence and goodwill trust were repaired at a differential rate and across different time trajectories. For instance, in case 3, competence trust showed downward recalibration, while goodwill trust signalled upward recalibration. The findings reveal that in all cases, apart from case 1, competence and goodwill trust were repaired dissimilarly, resulting in differential outcomes of post-repair trust. According to the graphical illustration from the within-case analysis (*Figures 4-1, 4-2, 4-3, and 4-4*), competence trust tended to be repaired steadily (less sensitive to reparative responses), while goodwill trust seems to have been repaired responsively (more sensitive to reparative responses). In addition to this, the data revealed that the trust repair process normally began with goodwill trust and then, competence trust. The next section explains the dynamics of goodwill trust repair.

Case	Duration of trust violation (in months)		Duration of trust repair (in months)		The severity of competence trust violation		Post-repair competence trust		The severity of goodwill violation		Post-repair goodwill trust	
<i>1</i>	1	1	5	2	Moderate	2	Upward recalibration	2	Low	2	Upward recalibration	2
<i>2</i>	1.5	2	6	3	High	3	Upward recalibration	1	Low	1	Restoration	3
<i>3</i>	6	4	12	4	High	4	Downward recalibration	4	High	4	Upward recalibration	1
<i>4</i>	2	3	4	1	Moderate	1	Restoration	3	High	3	Downward recalibration	4

Table 5 - 6. An overview of the trust repair outcomes [the figures in the right cells represent the relative position across the four cases; upward (or downward) recalibration indicates that post-repair trust was higher (or lower) than pre-transgression trust; restoration indicates that post-repair and pre-transgression trust remained the same]

The repair of goodwill trust

As both parties overcame the burden of past transgressions and refocused on the relationship itself at the positive turning point, at this phase it was still characterised by a heightened conflict of interests and impaired profitability. Hence, the first step was to resolve the perceived deficiency of the relationship value. The case findings show that corporate staff from both parties expressed and clarified each other's intentions and commitment, especially between senior staff. Then, the supplier tended to increase relationship-specific investment, in the forms of financial sacrifice and external investment. These reparative responses are explained in the following subsections.

Why competence trust was not considered to be the focal repair object is for two reasons. First, the accumulation of the past transgressions and ineffective reparative attempts in the trust violation stage were gradually perceived as shifting from competence- to integrity-based transgressions by the buyer. This means that the buyer's suspicion tended to emphasise the supplier's willingness/intention to fulfil the buyer's expectations rather than its capabilities to do so. Over time, the buyer was convinced that those transgressions and reparative attempts were in fact guided by corporate decisions by the supplier. Hence, without knowing the supplier's intentions about future collaboration, the buyer did not stress the repair of the supplier's competence, because *“any improvement of the supplier's competence was elusive and of short-term effect, which could not be sustained”* (Senior Purchasing Manager, buyer, case 3). Similarly, a respondent from case 1 mentioned that *“if the supplier's competence could be repaired all of the sudden, we would not be in this situation”* (Project Manager, buyer, case 1).

Second, the data have shown that the repair of competence trust was inherently driven by the repair of goodwill trust, to a certain extent. It is evident that competence trust was captured based on objective measures from different domains and activities managed and conducted by the operating staff. That is, competence trust is associated with the performance of operation- and execution-oriented tasks. From the buyer's perspective, reparative responses would not be effective in restoring the supplier's competence unless they were driven by corporate staff: *“[...] operating staff always need to be pushed by their corporate staff [...] the implementation of improvement actions [targeting at competence] is driven by a top-down approach”* (Director of Supplier Management, buyer, case 1).

5.3.1 Reparative responses and factors driving goodwill trust repair

The case findings revealed two reparative responses and two critical factors. Those responses were the expression of commitment and relationship-specific investment, while the factors pertained to senior management involvement and economic performance (*Table 5-7*).

Expression of commitment

The case findings showed that the buyer and the supplier's corporate staff re-familiarised themselves with a few face-to-face meetings and expressed their intentions towards future collaboration. The buyer could also reiterate the potential advantages of overcoming the trust violation and/or threats of not repairing it in a timely manner with the supplier to motivate its reparative efforts. For instance, in case 1, the buyer clarified the supplier's intentions of relationship continuity: *"dear general manager Chen, what is your attitude towards GN? Do you value us very much? [...] if you think GN is indispensable, we could just depart as early as possible [...] if you think that we are an important customer of yours, you should demonstrate some initiatives"* (Director of Supplier Management, buyer, case 1). In addition, the buyer also reminded the supplier that *"if you [GT] try harder to improve your quality and manufacturing process [...] if you hang in there, even if you do not get it right in the beginning, you have still got the opportunity"* (Director of Supplier Management, buyer, case 1). The supplier's general manager expressed how they viewed the buyer as an important customer and were willing to continue the relationship: *"the request to quit was sent by our operating staff [...] not a corporate decision [...] promised to drive the operating staff's cooperation"* (General Manager, supplier, case 1). Both parties came to realise that there was a misunderstanding about the causes of the trust violation.

In case 3, *"the supplier's general manager engaged in an under-table negotiation with the buyer's general manager, because they were friends and they played golf occasionally"* (Senior Vice President, buyer, case 3). The owner of the supplier leveraged the interpersonal relationship with the buyer to reinitiate negotiations, because it had halted all the orders placed with the supplier at the end of trust violation stage. The supplier demonstrated its sincerity and commitment to make up for the buyer's losses. While in case 4, the expression of commitment was facilitated by the distributor, where the executive/corporate staff had a good interpersonal relationship with both the buyer and the supplier. The distributor helped the supplier to signal a willingness to prioritise R&D and to guarantee the supplier's schedule. Conversely, the

distributor also convinced the buyer to absorb the losses and the compensation claim as learning costs to alleviate the tension. A respondent from the distributor noted: “*if the buyer and the supplier terminated the relationship or reduced the purchasing volume, we [distributor] also would have lost our commissions from the business exchange [...] did I have to be worried about this? Of course!*” (General Manager, distributor, case 4). That is, the distributor was concerned about the potential and long-term losses to the dyad, if the deadlock continued. Both parties re-established a common goal that alleviated previously incompatible intentions and promoted collaborative effort to recover the downstream customer’s needs quickly. Hence, the relationship had shifted from being competitive to somewhat cooperative.

Case	Buyer	Supplier	Reparative responses	Factors
1	<p>The buyer's corporate staff contacted the supplier's general manager to clarify directly the supplier's intentions as to whether the supplier wanted to work together in the future.</p> <p>The buyer encouraged the supplier to hold on and pictured the potential benefits, if the supplier overcame the quality issues.</p> <p>The buyer placed new projects during the repair process owing to the market expansion.</p>	<p>The supplier's general manager clarified that the request to quit was the decision of their senior operating staff, not a corporate one.</p> <p>The supplier's general manager signalled his goodwill and continuity intent.</p> <p>The general manager promised to continue improving the quality as well as to motivate and drive their operating level collaboration.</p> <p>The supplier transferred the VP from their more successful plant in China to conduct training on quality control and manufacturing processes.</p>	<p>Expression of commitment; Relationship-specific investment (financial sacrifices and external investment)</p>	<p>Senior management involvement; positive economic performance</p>
2	<p>The buyer accepted incorporating an additional manufacturing procedure to accommodate the supplier's adjustments.</p> <p>The buyer maintained a positive and constructive attitude.</p>	<p>The supplier's general manager arranged several meetings with the buyer's general manager.</p> <p>The supplier was willing to absorb the costs of material change and additional manufacturing procedures, if the buyer accepted incorporating one additional manufacturing procedure.</p> <p>The supplier tailored the solution for the buyer.</p> <p>The supplier constantly signalled care and encouraged the buyer to voice any concerns.</p> <p>The supplier decided to relocate the factory and to recruit more QA engineers.</p>	<p>Expression of commitment; Relationship specific investment (financial sacrifices and external investments)</p>	<p>Senior management involvement</p>
3	<p>The buyer accepted the terms and conditions offered by the supplier.</p> <p>The general manager passed the information to the CEO to announce the deal in a corporate meeting.</p> <p>The buyer placed more orders across different products of the supplier during the repair process due to a significant growth in business.</p>	<p>The general manager of the supplier engaged in under-table arrangements with the general manager of the buyer in private and utilised the interpersonal attachment as leverage.</p> <p>The supplier proposed financially favourable terms and conditions to the buyer (e.g. extended the payment days from 120 to 180; agreed to absorb transportation and insurance fees)</p> <p>The supplier committed to establishing a factory in China and creating a service centre in Poland.</p>	<p>Expression of commitment; Relationship specific investment (financial sacrifices and external investments)</p>	<p>Senior management involvement; positive economic performance</p>
4	<p>The buyer asked the distributor to clarify the supplier's intentions and drive the latter's collaboration.</p> <p>The buyer decided to absorb the compensation claim.</p>	<p>The supplier signalled its willingness to allocate more resources to solve the issue as soon as possible.</p>	<p>Expression of commitment; relationship-specific investment (financial sacrifices)</p>	

Table 5 - 7. An overview of the reparative responses and factors affecting the repair of goodwill trust

Relationship-specific investment

The data revealed that relationship-specific investment entailed financial sacrifice and external investment. In terms of the financial aspect, for instance, in case 2, the supplier presented the buyer with a permanent solution, based on extensive lab testing, which could work without directly increasing its material cost; only requiring an indirect additional manufacturing procedure. The supplier was willing to “[...] *absorb the cost associated with the material and additional manufacturing procedures*” (General Manager, supplier, case 2). The proposal, in fact, dispelled the buyer’s initial concern regarding the potential increase to the direct cost. This act not only signalled the supplier’s commitment, for it also corroborated the buyer’s acceptable cost. Likewise, in case 4, the supplier provided a specific timeline, resources being committed, and also, detailed conditions for experimentation. The supplier’s willingness to prioritise resources for the smaller buyer was perceived to be an expression of its goodwill. Case 3, however, experienced a larger relationship-specific investment, which involved significant financial sacrifices and external investments. That is, the supplier’s general manager agreed to accept financially unfavourable terms and conditions on the firm in favour of the buyer (e.g. payment from 120 to 180 days) and promised to increase investment dedicated for it (e.g. building a new manufacturing centre and local service centres for the buyer). This essentially transferred the supplier’s interests to the buyer. Thus, the buyer’s goodwill trust was greatly repaired, in particular, because those sacrifices would come to restrict the supplier’s operational flexibility: “*the supplier’s general manager came up with very financially attractive terms and conditions for us*” (Senior Vice President, buyer, case 3). Hence, the buyer would have more control over the supplier in the future: “*in the past, the supplier had more bargaining power [...] now we have imposed stricter requirements and control on the supplier*” (Deputy Executive Officer, buyer, case 3). This then convinced the buyer that the supplier would require putting more effort into fulfilling the former’s requirements in order to make up for the losses.

The two factors affecting the effect of goodwill trust repair were senior management involvement and economic performance. The former was particularly effective in the early phase of the goodwill trust repair, while the latter tended to repair goodwill trust further in the later phase, during which competence trust had been repaired, to some extent.

Senior management involvement

Senior management involvement was key to the repair of goodwill trust. A respondent from case 1 mentioned: “[...] *their boss has to express this kind of attitude to their staff [regardless of the customer’s size, volume, and importance, customers are customers. They are all important to us] through a top-down approach onto their operating staff. To be frank, their operating staff always need to be pushed by their corporate staff*” (Director of Supplier Management, buyer, case 1).

It is critical to realign the expectations of the corporate level staff between the buyer and the supplier to set the tone for the follow-up repair of competence trust. Across all cases (case 4 being facilitated by the third-party distributor), it emerged that the higher up the hierarchy, the more powerful the corporate staff to deploy resources. Specifically, senior management intervention from the dyad not only resulted in a more effective socialising process, but also, led to more solution-focused outcomes. The effectiveness of senior management intervention matters, especially to the supplier, because it can mitigate the inter-organisational tension internal to it, which will then pave the way for a smoother implementation. Moreover, the operating level staff will receive a clearer direction for pursuing collaboration. Amongst the four cases, the suppliers’ CEOs or general managers from cases 1, 2, and 3 got involved in this phase. The higher the hierarchy of the staff involved was perceived as being more sincere and potentially point to efficiency in the following phases. Accordingly, the buyer and the supplier re-established a communication platform, reinforced their interpersonal relationships as well as clarifying and realigning future expectations.

Economic performance

Another critical factor relates to economic performance. This factor was found to play out in the later phase of goodwill trust repair, when the supplier had somewhat repaired its competence. This effect was particularly pronounced in cases 1 and 3, in that both resulted in more positive economic performance compared to the pre-transgression stage. In case 1, the ongoing projects in the new segment, automotive OEM, had yielded good market penetration with downstream customers. A respondent noted: “*Until the later period of the trust repair [...] while we reviewed the quarterly report of the supplier performance, we found that this supplier was currently performing well with a lot of improvement [...] the downstream customer was satisfied with the result [regarding the growth of the OEM automotive market]*”

we started to award them with some new projects” (Director of Supplier Management, buyer, case 1).

Likewise, in case 3, the supplier had helped the buyer to catch up with its netbook competitor with respect to market share through large scale production within a short period of time. Such a strong comeback for the netbook unit had provided leverage to the repair of the previously declining laptop unit. It generated a positive spiral, where the new and more successful projects, in fact, overshadowed the losses caused by the transgressions in the trust violation stage: *“AC was our largest customer while we were AC’s largest supplier. The relationship had gradually been repaired as the business had significantly expanded, because of the excellence of operational execution and business performance”* (Executive Vice President, supplier, case 3). This somewhat resembles the reverse reaction in the trust violation, in which the accumulation of competence-based transgression was gradually perceived as an integrity-based transgression. That is, the supplier’s demonstration of consistent fulfilment of the buyer’s expectations also boosted the goodwill trust, *“because their corporate staff managed to repair the relationship properly with our corporate staff via solid operational performance”* (Senior R&D Engineer, buyer, case 3). As a result, the buyer had become the second largest global computer manufacturer, with its market share expanding massively owing to the supplier’s full support. Such unprecedented success witnessed in the enlarged pie, was perceived as a big reward for risk-taking behaviour by the dyad: *“both parties had in fact taken on a lot of risks [...] it had all paid off”* (Senior Vice President, buyer, case 3).

However, this only applies under a critical condition, the presence of a growing market. More importantly, the presence of a prospective market facilitated the dyad to make compromises and to take the risk because of the potential reward in the future. For example, in case 3, the buyer and the supplier decided to ‘strike while the iron was hot’, in the form of accelerated production and rapidly expanded projects. If the market is not growing, such risk-taking behaviour will not take place.

5.3.2 Reparative responses and factors driving competence trust repair

Partly repaired goodwill trust signalled the realigned expectations to relationship continuity at the corporate level, which in turn, facilitated operational arrangements, for *“corporate staff between the buyer and the supplier only outlined overarching goals and rules, which should*

be followed up by operating staff between the dyad” (Senior Vice President, buyer, case 3). The buyer and the supplier then began to implement the promised and negotiated terms, conditions, and solutions in which boundary spanners at the operating level coordinated the tasks between functional departments within and across organisational boundaries: *“the goal could not be attained by individuals, but rather, required extensive inter-team collaboration”* (Senior Project Manager, supplier, case 3). As a result, communication and collaboration between operating staff across the functional and organisational boundaries had intensified. *“Success or failure depended on how effective and efficient those operating staff were in operational execution”* (General Manager, distributor, case 4). Those operating staff were expected to follow the guidelines and instructions identified after the consensus was reached by corporate staff. For most of the cases, the supplier prioritised its resources dedicated effectively and efficiently to solve the disruptions at hand, thus eliminating the causes of transgressions.

As the competence trust repair process progressed, the buyer’s operating staff would gather evidence (e.g. periodic audit and survey) and feedback for the corporate staff to review and assess whether such repair was effective and could be deemed normative. To achieve this, the supplier had to demonstrate that it could consistently deliver products to a satisfactory level. For instance, in case 1, the supplier had demonstrated a consistent delivery of qualified products under tightened IQC over an extended period of time: *“for ten continuous deliveries without being given any correction action report [CAR], we then considered releasing them from the observation list”* (Senior Purchasing Manager, buyer, case 1). Hence, this explains the reason why competence trust generally takes more time to substantiate after reparative responses were enacted. There are three main reparative responses identified from the case findings, including replacement of boundary spanners, buyer’s assistance, and buyer’s perception of supplier’s reparative efforts.

Replacement of boundary spanners

The first factor refers to the replacement of boundary spanners at the operating level. These include engineers on the production lines, those in R&D and project managers. The repair of competence trust required frequent cross-functional and organisational interaction among middle to high level operating staff, especially for those in charge of information facilitation and resource coordination from the buyer and the supplier. If these boundary spanners still

carried the shadow of the past in the trust violation stage, their biased attitude and perceptions would undermine the extensive operational coordination and performance. That is, some of them might still have held grudges and engaged in stereotyping regarding the counterpart since those boundary spanners (operating staff) had observed the whole process of trust violation and potentially carried the weight of the past.

It should be noted that boundary spanners in the larger scale collaborations (i.e. cases 3 and 4) were more likely to suffer from the shadow of the past, because they had to suffer from a series of transgressions for a longer period before these became escalated, thus having to receive corporate attention. Hence, the operating boundary spanners would have experienced longer and deeper technical and relational difficulties than those in the dyads with smaller scale collaborations, where corporate staff tended to intervene quickly. To address the bad blood, in case 3, *“the supplier replaced a significant number of engineers from its production lines. Also, the supplier changed many of its R&D engineers”* (Deputy Executive Officer, buyer, case 3). Moreover, *“we [the supplier] shifted many teams that were previously dedicated to the buyer to other projects and replaced them with new members [...] some of the operating staff were upset with the buyer’s operating staff [...] while other staff felt a sense of defeat, because of the multiple transgressions that occurred beforehand”* (Senior Project Manager, supplier, case 3). The newly brought in boundary spanners could concentrate on the specified tasks without being overshadowed by the transgressions of the past. In addition, a respondent noted: *“Normally best teams would be responsible for the most difficult projects or projects with the largest volume. Moderate teams might be assigned to regular projects”* (Senior Project Manager, supplier, case 3). The supplier also replaced existing teams with the best teams to guarantee excellent performance. Similarly, in case 4, the buyer also replaced its R&D director with a former senior R&D engineer, who was familiar with the distributor, in an attempt to facilitate the repair progress by driving the distributor. In sum, boundary spanners were replaced with staff responsible for critical operational purposes.

Buyer’s assistance

The presence of the buyer’s assistance appears to be a critical factor for the repairing of competence trust. It always involves some technical and operational challenges embedded in the process that prevent those early technical issues to be resolved before the deadlock. The active help provided by the buyer essentially accelerated this aspect of trust of the supplier.

Amongst the four cases, the buyers in cases 1, 2, and 3 assisted the suppliers to some extent. In case 1, the buyer explained the specifications of the quality requirements to the supplier to eliminate completely any technical and contractual ambiguities: *“we emphasised and clarified the specs and quality required from the contract and confirmed these specs individually with the supplier”* (Director of Supplier Management, buyer, case 1). Moreover, the buyer *“sent a quality improvement team to educate and advise the supplier, because the buyer still had hope in the supplier and still thought they had got the potential”* (Director of Supplier Management, buyer, case 1). When providing technical assistance, this also allowed the buyer to monitor the supplier’s performance. Such monitoring *“[...] was not just observing or supervision [...] the main task for monitoring was to help them discover their potential negligence or unaware practices in their management and manufacturing that led to quality issues”* (Project Manager, buyer, case 1). As a result, the buyer identified several loopholes in the supplier’s production line and in turn, requested it to outline a step-by-step repair schedule for subsequent audits.

Likewise, in case 2, the buyer appointed staff to help the supplier to troubleshoot and provide improvement instructions on-site. The buyer also sent staff to monitor closely the performance of the supplier over a period of time to stabilise its competence. A respondent mentioned: *“the standpoint we took was from the assistance perspective. Since quality specifications seemed to be rather ambiguous [...] our QA and their QA tended to experience some arguments in the early phase of competence trust repair. Our senior purchasing manager was there to coordinate and deal with disagreements”* (General Manager, buyer, case 2). With the buyer’s on-site assistance, the root causes of transgressions had gradually been minimised for the supplier’s upstream suppliers. As a result, the buyer’s senior purchasing manager *“[...] facilitated the process of re-certification of the upstream suppliers to ensure RoHS lead-free production across the supply chain”* (Senior Purchasing Manager, buyer, case 2).

On the other hand, in case 3, the buyer had given up on helping the supplier at the end of the trust violation stage, so it decided not to commit too many resources to help the supplier. The buyer principally relied on control provision by *“appointing some hardware and software specialists to control and manage their operations [...] without our consent, the supplier could not adopt alternative components and materials”* (Deputy Executive Officer, buyer, case 3). Whereas in case 4, the third party, the distributor played the main role regarding assistance provision. It helped to collect parameters adopted with this material from other assembly plants to generate possible lessons learnt for the buyer’s reference. Meanwhile, the distributor assisted the supplier by getting involved in the troubleshooting process and providing

suggestions on potential errors in the semiconductor manufacturing process as well as corresponding solutions.

Overall, the findings illustrate that buyer assistance could not just directly boost the effectiveness of actualising the proposed tasks and solutions, but more importantly, it served as a less intrusive and less adverse way to monitor and control the supplier's operations. This lowered the supplier's resistance and correspondingly, reduced the buyer's uncertainty towards the supplier's intentions as well as the capabilities of fulfilling the agreed tasks.

Buyer's perceptions of supplier's reparative efforts

The effect of competence trust repair was also determined by the buyer's perceptions of the supplier's overall reparative efforts. One critical factor was how effective those reparative responses could eliminate and prevent the causes of the previous transgressions. Regarding which, in case 1, the dyad had reached a consensus on the standardisation of inspection gauges that essentially lowered the variations between the supplier's OQC and the buyer's IQC. The supplier also made adjustments to the tooling to minimise the need for manual recalibration after production as much as possible. Similarly, in case 2, the dyad had re-certified the supplier's upstream suppliers to ensure their RoHS compliance in terms of raw materials procurement and manufacturing processes. This effectively controlled the possibility of lead contamination from the upstream suppliers. In case 3, the supplier added more checkpoints from the design to the mass production processes, for which the supervisor's approval was needed from one stage to the next. In addition, the supplier set up a system that demanded operating staff constantly compare the project at hand with the log file that recorded all previous technical and functional failures associated with a product category. This would significantly avoid any reoccurrence.

Apart from the perceived prevention of the causes of the past transgressions, the buyer's opinion regarding the supplier's competence was also assessed according to the general improvement in capabilities. This means that, the supplier could treat trust repair as opportunities to implement a quality overhaul and other relationship-specific investments (e.g. new plants and new quality certification) targeted at elevating the supplier's overall competence. For instance, the supplier from case 1 transferred a VP from its more technology-sophisticated plant in China to conduct intensive training with its staff from Taiwan, quality control in particular, and to refine the current manufacturing process. In three months, this

helped the supplier to overcome the technical threshold and significantly elevate the quality performance. Similarly, the supplier in case 2 decided to invest in building a new plant in the north for higher circulation of information, knowledge, and talent as well as applying for quality certification (ISO 9000), as “*we felt the urge to invest in our QA system and improve knowledge exchange with other companies*” (General Manager, supplier, case 2). In case 3, not only did the supplier engage in a full-range of capability improvements led by its R&D and quality assurance teams, for it also actualised the commitment made beforehand regarding the establishment of a manufacturing centre and service centres devoted to the buyer’s production. These reparative responses were targeted at enhancing the supplier’s overall competence, rather than recouping the competence domains affected by the previous transgressions.

A brief summary of this section

The dynamics of trust repair began with a period of a positive turning point, where the buyer and the supplier engaged in rational cost-benefit analysis, assessing the potential losses and future gains of the relationship, which helped shift the dyad’s focus from the past transgression to preserving the fundamental value of the relationship. This determined the level of the motivation to repair violated trust. During the trust repair process, goodwill trust appeared to be repaired prior to competence trust due to the primacy of relationship outcomes.

Under the repair of goodwill trust, the buyer and supplier first expressed their commitment and continuity intentions, which realigned expectations. Then, the supplier agreed to make relationship-specific investment that reallocated the interests through financial sacrifices and external investment. Moreover, senior management involvement and economic performance appeared to have a temporal impact, whereby the former facilitated in the early phase of goodwill trust repair, while the latter only became relevant in the later phase. Senior management involvement allowed corporate staff between the dyad to come together and agree on general arrangements that set the tone for specific tasks for operating staff to implement. On the other hand, whilst not every case experienced improved economic performance in the later phase, it provided a condition that further aligns the future interests between the partners and encourages them to overlook the violation and capitalise on the expanding business.

The repair of competence took place when the buyer and the supplier realigned their expectations. During this phase, the focus was on the effectiveness and efficiency of the operational execution of previously agreed terms and conditions. With the replacement of boundary spanners and buyer's assistance, the repair of competence trust was facilitated. Notably, the buyer assessed the supplier's competence based on two aspects, namely, the perceived prevention of the causes of the past transgressions and overall competence improvement in other capability domains.

CHAPTER SUMMARY

This chapter has presented the cross-case analysis for the four cases under investigation, thereby addressing the two research questions. The dynamics of trust violation has been elaborated upon through consideration of the overall trajectory of the violation of competence and goodwill trust. Moreover, factors shaping the severity of the violation of the two trust dimensions have been identified. With respect to the dynamics of trust repair, the reparative responses across the four case studies have been presented regarding their effects on repairing goodwill and competence trust. In addition, the factors affecting the repair of the two trust dimensions have been explained, respectively.

CHAPTER SIX: DISCUSSION

INTRODUCTION

This chapter compares the within-case and cross-case analysis findings with the extant literature, and in doing so, addresses the overarching research questions of the thesis. Section 6.1 considers the dynamics of competence and goodwill trust in the violation stage. The following subsections 6.1.1 and 6.1.2 elaborate upon the factors affecting the severity of trust violation and their differential effects on competence and goodwill trust. Next, section 6.2 examines the dynamics of the trust repair stage, whilst subsection 6.2.1 discusses the positive turning point. Finally, subsections 6.2.2 and 6.2.3 address the repair of goodwill and competence trust, respectively, involving reparative responses and the factors affecting the effectiveness of trust repair.

6.1 TRUST VIOLATION

The analysis has revealed a set of answers to the research questions by compiling evidence from within-case and cross-case analysis. Research question one is:

What are the dynamics of competence and goodwill trust in the trust violation stage?

In response to RQ1, the findings show that the dynamics of the two trust dimensions are triggered by multiple transgressions. Each goes through the phases of discovery, resistance, and intervention, with the final transgression eventually leading to the escalation phase. Thus, how multiple transgressions develop and progress is critical to understanding changes in competence and goodwill trust in the trust violation stage.

6.1.1 Multiple transgressions

The case findings have shown that a trust violation in an inter-organisational relationship involves a series of multiple transgressions and reparative attempts by the supplier and/or buyer. These reparative attempts are targeted at countering the negative effects of those transgressions on the buyer's operations and perceptions. In contrast to the extant literature,

the findings illustrate that trust violation is not a one-off phenomenon consisting of only a single transgression and one assessment (e.g. Bell et al., 2002; Wang and Huff, 2007; Weber, 2017), but is instead best characterised by multiple transgression and repair attempts. Following the call by Dirks et al. (2009) and adopting a longitudinal approach recommended by Stevens et al. (2015), the outcomes of the thesis have helped to unpack further the trust violation stage in inter-organisational relationships.

The analysis has shown that trust violation in inter-organisational relationships is characterised by multiple loops of discovery, resistance, intervention and finally, escalation. This means that trust violation is a process rather than a one-off event (as initially proposed by Grover et al., 2014). The loops are repeated until trust violation reaches a deadlock, which represents the end of it and the beginning of trust repair. Consistent with the literature (e.g. Kim et al., 2004; 2006), it has emerged that a trust violation process begins with the discovery phase, because a transgression must be perceived to have occurred before triggering a trust violation. The findings empirically confirm Janowicz-Panjaitan and Krishnan's (2009) proposition that competence-based transgressions are more easily identified than integrity-based ones at the inter-organisational level. The findings also show that competence-based transgressions are discovered based on objective information (mainly reporting from the production line and quality control) that drives the buyer's awareness of the issue, whilst integrity-based violations are associated with higher causal ambiguity (Tomlinson, 2011), where data are usually absent or sparse and attributions of blameless certain (Ferrin et al., 2007). For example, the buyer from case 4 substantiated the cause of the supplier's integrity-based transgression via the assistance of the distributor, which collected data from their other customers.

Once a transgression is identified by the buyer, it and the supplier enter the resistance phase. The case findings are consistent with Kim et al.'s (2009) conceptualisation regarding the bilateral dynamics engaged in by both parties. This suggests that the trustor (the buyer) plays an active role in resisting the trustee's (the supplier) responses. The strength of such resistance depends on the buyer's perceived culpability attributed to the supplier. However, Kim et al. (2009) mainly focused on the trustor's perspective and assumed that the trustee is willing to repair. In contrast to their study, the case findings illustrate that both buyer and supplier demonstrate resistance to each other. Specifically, the buyer wants to hold the supplier accountable for the transgression, because the latter has already caused it a loss (operational, financial, and reputational). Whilst the supplier is not willing to take full responsibility,

because it feels that the buyer should also be responsible. Thus, the supplier attempts to shift the blame to external causes (Tomlinson and Mayer, 2009). For example, in case 1, the continuous underperformance on quality was partially caused by additional requirements imposed on the supplier's over specifications. This means that, a trust violation may have different meanings depending on whose perspective is taken in the situation, because the attribution is unilateral and fundamentally "*a subjective perception about what the offence symbolises and what is required to address it*" (Okimoto and Wenzel, 2014, p. 446). Such disagreement prompts further investigation by both parties to verify and substantiate the causes and responsibility for a specific transgression. As more information becomes available, the buyer verifies the type of the transgression and reacts accordingly. The findings of this study empirically verify Janowicz-Panjaitan and Krishnan's (2009) claim that the buyer reacts more intensely to integrity-based transgressions than competence-based ones.

After mutually agreed responsibility is reached, both parties move on to the intervention phase, in which initial reparative attempts are adopted to counteract the negative effect of the initial transgression. It should be noted that *reparative attempts* represent actions buyers and suppliers adopt in the trust violation stage, while *reparative responses* refer to actions the dyad enact in the trust repair stage. Such periodic intervention in the trust violation stage has never been explored (Gillespie, 2017). Those reparative attempts appear to be standard responses generally specified on the contract and initiated by the operating staff. For instance, the supplier across the cases decided to heighten their IPQC and OQC and agreed to pay compensation, while the buyer placed a stricter IQC to deter reoccurrence for an extended period of time until the supplier's quality became stabilised. Such reparative attempts lead to reconciliation between the dyad, which indicates that the buyer and the supplier have decided to settle with the transgression and move on (Tomlinson et al., 2004). However, researchers have yet to explore the notion that the buyer may reconcile with the supplier's reparative attempts, with every reconciliation made being one step closer to the trust threshold. This means that reparative attempts are not preventive in nature, for both parties decide to settle because both parties tend not to allocate too much attention on resolving early transgressions. However, the findings suggest that the accumulation of ineffective reparative attempts gradually challenges the buyer's tolerance and eventually backfires as those less effectively recouped domains create operational loopholes that make future disruptions more likely. For instance, the supplier from case 1 incorporated extensive manual adjustments into its products after manufacturing process: "*products that were adjusted manually by our labour did not end up with good quality in terms of consistency. The stability was not high*" (General Manager,

supplier, case 1). As a result, despite significant resources being invested by the supplier, the consistency of manual adjustments could not be sustained, especially in the event of a high volume of orders.

It should be noted that the initial transgression serves as the turning point that initiates a trust violation process, but it is not necessarily the reason that brings trust to a deadlock in the presence of multiple transgressions. Instead, the initial transgression plants the seed for the following ones and the corresponding ineffective reparative attempts. As multiple loops continue, this gradually widens the perceived gap of the buyer's expectations, because reparative attempts provided by the supplier have been perceived to be ineffective and non-preventive, thereby resulting in increasing levels of operational loopholes and dissatisfaction (as aforementioned). Moreover, the buyer's focus will change from transgressions induced by the supplier per se to the overall reparative attempts enacted by the latter that have failed to resolve the transgressions effectively (Salo et al., 2009). When the relationship passes a trust threshold, where the situation is out of the operating staff's control, it proceeds to the escalation phase. In the intervention phase, structural responses targeted at radical changes to the contract and permanent operational overhaul are unlikely to be implemented due to the involvement of middle to low hierarchy staff (Dirks et al., 2009). Those operating staff are reluctant to report to the senior level management unless the loss is very high (Laequddin and Sardana, 2010). This is because, if they constantly reported to corporate staff, they would be seen as incompetent. Thus, operational staff try their best to contain transgressions even if the supplier offers ineffective reparative responses. The findings are consistent with Whipple and Roh's (2010) argument from agency theory. As a result, a lack of senior-level intervention prevents transgressions from being dealt with completely and effectively, which in turn, creates a negative spiral.

The accumulation of transgressions depletes each party's resources and consequently, undermines their profitability. It threatens the continuation of the inter-organisational relationship as perceived by the buyer and/or the supplier (Lewis and Weigert, 1985). Hence, both firms strive to protect their own interests against each other. The situation is no longer under operating and middle hierarchy staff's control, but rather, has escalated to senior level management due to the significance of the trust violation. In this vein, the outcomes of this thesis add to Janowicz-Panjaitan and Krishnan (2009) by delineating how operating level violations can gradually develop into corporate level ones through the accumulation of

ineffective reparative attempts and increasing severity of trust violation. Then, the result of the escalation phase is deadlock.

The extant literature has not specifically examined the characteristics of the deadlock. The findings show that the relationship becomes competitive, with one or both parties showing no desire to continue dealing with the other (Gedeon et al., 2009). For instance, the buyer in case 2 ended a meeting with a set of requirements regarding the preferred materials and costs. In addition, the buyer could halt its purchases from the supplier or start to test the adaptability and capability of alternative ones (Harris et al., 2003). Regarding which, the buyers from cases 1, 2, and 3 attempted to evaluate alternative suppliers. The buyer from case 3 actually shifted some orders from the supplier to an alternative, but it did not have enough production capacity when compared to their existing supplier.

This subsection has discussed the main findings regarding the general process of a trust violation in terms of different temporal phases and transgressions. The next subsection considers the factors that affect the severity of this violation.

6.1.2 Factors affecting the severity of trust violation

This subsection covers four main factors, dyadic interaction, cross-domain failures as well as the types and locus of the initial transgression, all of which were identified in the cross-case analysis.

Dyadic interaction

Previous inter-organisational trust violation studies have neglected to capture the detailed actions and reactions between both the buyer and supplier throughout the process of trust violation (please see calls by, for instance, Dirks et al., 2009; Gillespie, 2017). Despite one paper having identified at the interpersonal trust level that the trustor plays an active role in facilitating or hindering the trustee's reparative efforts (Kim et al., 2009), it was assumed that suppliers are willing and able to offer reparative responses that will either repair the trust violation or not (e.g. Crossley, 2015; Wang et al., 2014). Instead, this processual case study has led to the identification of dynamics that have hitherto been unexplored: supplier motivation; proportionate reactions, and the buyer's escalating expectations.

Supplier's motivation

The first dynamic throws light on the supplier's motivation to react to the initial transgression. Whereas prior literature has generally assumed that the supplier is always motivated to offer reparative attempts to the buyer (e.g. Li et al., 2013; Yu et al., 2017), the findings of the current work have shown that the level of supplier motivation to repair is not constant. It gradually decreases with the buyer's heightening requirements and restrictive measures imposed on the supplier. Kim et al. (2009) conceptualised that the trustor plays an active role in resisting the trustee's responses (e.g. adding time constraints to the supplier and expressing stronger emotions) at the interpersonal level. From the data, after the initial transgression, it can be seen that the supplier is generally motivated to offer reparative attempts to the buyer. However, the level of motivation is inherently driven by the supplier's level of dependence, which is consistent with Tomlinson and Mayer (2009). In addition, a higher level of supplier motivation will directly inform the quality that the reparative attempts can provide (i.e. proportionate reactions) in the buyer's eyes.

Proportionate reactions

The second dynamic highlights the need for a proportionate reaction. This indicates the supplier's reparative attempts measured against the buyer's expected responses; the smaller the discrepancies of reparative attempts induced by the supplier to the buyer's expectation, the more proportionate those attempts are perceived to be. For example, in case 2, the supplier resolved the compensation issue quickly and explained the causes and solutions thoroughly to the buyer. The findings reveal that proportionate reactions by the supplier can mitigate the violation of trust after transgressions. This means that, if the supplier puts more effort into resolving transgressions, the severity of trust violation can be reduced, especially regarding goodwill trust (Wang et al., 2014), because the buyer perceives that the supplier is still demonstrating concerns about its interests and is willing to fulfil its expectations. However, despite proportionate reactions, the perceived gap is still present, because the cause of the transgression(s) has not been eliminated. In addition, it is unlikely that the supplier will continue delivering proportionate reactions to the buyer throughout the trust violation stage, because of changes to its motivation over time. Hence, this leads to the final dynamic of the buyer's escalating expectations.

Buyer's escalating expectations

The final dynamic clearly highlights the changing expectations that buyers have throughout the violation process. The findings show that the buyer, over time, increases its level of resistance, by exercising more punitive clauses (e.g. stringent control and monitoring) against the supplier in order to prevent further harmful consequences. This gradually widens the buyer's perceived gap over multiple transgressions (Bachmann et al., 2015). That is, the buyer believes that the supplier should be capable enough to fulfil the tasks, but is choosing not to allocate sufficient resources to do so. Hence, the buyer increases the penalties, not only to secure its own interests, for it also expects the supplier to treat the transgressions with a higher level of priority. For example, the buyer in case 3 began to countervail information provided by the supplier by repeatedly challenging different technical aspects and quality control processes of a product or a particular reparative attempt initiated by the supplier. By adding more barriers, the buyer can be certain that the supplier allocates more resources to fulfil the subsequent tasks and thus, prevent the reoccurrence of transgressions.

However, increasingly stringent terms and conditions imposed by the buyer do not meet the intended purposes. They not only create operational difficulties that undermine the ability of the supplier to continue fulfilling the buyer's expectations, for those clauses also lead to increased financial and operational burdens (e.g. frequent charges of compensation, reworks, and extra manufacturing processes). This means it becomes more difficult for the supplier to offer proportionate reactions due to the limited resources available and increased expectations from the buyer. Consistent with Malhotra and Lumineau (2011), with stricter control signified by the buyer, the supplier will exhaust its resources to maintain its competence to meet the buyer's requirements, which it can in the short term (with proportionate reactions). However, this situation gradually impairs the supplier's interests, which is reflected in reduced goodwill trust in the relationship (based on symmetrical trust assumed by Malhotra and Lumineau, 2011). The authors investigated the effect of different means of dispute resolution on competence and goodwill trust, but they did not trace relationships where this resolution was ineffective (manifested in competence and goodwill trust) longitudinally. This study not only offers rich qualitative extensions to their work, but the findings also show how the use of intensive control exacerbates the relationship over the longer term.

As the supplier needs to invest more resources with the buyer, this gradually reduces its profitability and in turn, affects its motivation to sustain proportionate reactions. Moreover, the supplier becomes less able to sustain the competence displayed initially, because of higher operational and financial difficulties. As a result, the buyer becomes increasingly dissatisfied with the supplier's reparative attempts, thereby creating a negative spiral. That is, the buyer's expectations are escalating due to the perceived supplier underperformance, while the latter becomes less motivated to offer reparative attempts owing to impaired interests. This is consistent with Nyaga et al. (2010), whereby the buyer emphasises the outcome of the relationship, while the supplier focuses on securing its transaction-specific investment. Consequently, the heightening conflict of interests prompts the supplier eventually to halt further reparative attempts by signalling its uncooperativeness (e.g. intention to quit and reduction of resource allocation) or taking control by counterbalancing its interests (e.g. transferring costs to the buyer).

This subsection has discussed how dyadic interaction, constituted by the dynamics of supplier motivation, proportionate reactions, and the buyer's escalating expectations, exacerbate the trust violation. The next subsection explains the effect of cross-domain failure on the severity of the trust violation.

Cross-domain failure

Based on the processual nature of the study, the findings first reveal that trust violation consists of multiple transgressions. Following this, the data show that these transgressions, although related, can spread across domains, which refers to aspects the supplier demonstrates particular expertise and knowledge of (Mayer et al., 1995). For example, in case 3, multiple transgressions led to the buyer gradually discounting the supplier's competence in procurement, technical design, the manufacturing process, lab certification as well as essential knowledge about ICs and frequency interference.

The extant literature generally acknowledges that competence trust is domain-specific (Connelly et al., 2018; Lewicki et al., 1998), but this has never been investigated in the trust violation and repair context, possibly due to the lack of longitudinal research. According to the literature, competence trust can be attributable to multiple operational and exchange aspects of inter-organisational relationships (e.g. manufacturing, R&D, and cost management) (Connelly et al., 2018). This indicates that, the buyer places different emphasis on the

supplier's displayed functions. For example, in case 1, the buyer particularly emphasised the supplier's quality, because this was what led to it being selected initially from the requirement for a quotation for automotive OEMs (99% yield rate required). Likewise, in case 3, the buyer placed a significant focus on the supplier's cost and production capacity, which meant that transgressions that occurred across the different domains led to differential levels of severity of trust violation. Thus, a transgression that happens on the supplier's production capacity may be perceived to be more severe than one occurring in respect of R&D capability, as in case 3. Thus, the findings add to the literature by showing that competence is more resilient than its goodwill counterpart, because of its domain-specific characteristics. That is, if the supplier's most valuable domains of expertise remain unviolated, the severity of competence trust violation can be contained (i.e. case 4). However, if cross-domain failures occur, this indicates that multiple domains of the supplier's ability are being questioned by the buyer, which will gradually heighten the severity of competence trust violation. As a result, this will threaten the continuation of the buyer-supplier relationship (Wang et al., 2014).

The type of initial transgression

The extant literature has rarely examined the impact of competence- and integrity-based transgressions empirically (a notable exception is Wang and Huff, 2007). This literature has also treated both types of transgression independently and as being mutually exclusive (Janowicz-Panjaitan and Krishnan, 2009), but the case findings suggest that competence- and integrity-based transgressions are interrelated. A competence-based transgression refers to an incident caused by a supplier willing to fulfil the buyer's expectations, but failing to do so, while an integrity-based one pertains to an incident caused by the supplier that is capable of fulfilling the buyer's expectations, but the former is unwilling to do so (ibid). For instance, in case 2, a series of product contaminations (lead residues) on supplier's products due to less strict quality control was perceived to be a competence-based transgression. In contrast, in case 4, changes were made to the supplier's product without authorisation, which caused IC breakage to the buyer's chips and this is regarded as an integrity-based transgression, because the buyer perceived that the supplier had engaged in opportunism.

From the data, competence-based transgressions are easier to discover and substantiate, because these are directly reported by operating staff based on objective measures (e.g. yield loss, lot reject rate, and capability process index). As a result, a substantiated competence-

based transgression directly violates the competence trust. This is consistent with Janowicz-Panjaitan and Krishnan (2009). Conversely, integrity-based transgressions are more difficult to discover, because they require more information to substantiate them. The findings reveal that an integrity-based transgression begins with the discovery of objective evidence like with competence-based transgressions. However, because of the relative severity or criticality of the transgression, the buyer will tend to allocate more resources in investigating the cause in order to substantiate the supplier's responsibility and claim compensation accordingly. For instance, in case 4, the buyer suffered a great yield loss on its downstream customer's chips after applying the supplier's material. Whilst the supplier shirked responsibility, arguing that they had urged the buyer to conduct a pre-test on dummies, the latter still suspected that the former might be withholding critical information from them. As more information was acquired, the buyer's distributor suggested that the supplier make some changes to the agreed specifications in an attempt to solve the buyer's and one of their competitors' issues simultaneously (different technical issues) without authorisation. The findings are consistent with Tomlinson (2011) that the buyer is more likely to suspect transgressions with higher causal ambiguity and more severe transgressions. It has emerged that, integrity-based transgressions are more severe due to their unexpectedness in nature and higher emotional distress (Wang and Huff, 2007). When an integrity-based transgression is verified, it engenders more severe reactions from the buyer (e.g. emotional distress and heightened resisting responses) and significantly impairs goodwill trust, which is consistent with Wang and Huff (2007). This is the first study to investigate empirically and qualitatively the outcome of different types of transgressions. It realistically captures the emotions and behaviour of the buyer after integrity-based transgressions, which adds to the vividness, as opposed to scenario-based experiments conducted by Wang and Huff (2007).

It should be noted that the data suggest that a goodwill trust violation resulting from integrity-based transgressions has an overshadowing effect on the subsequent competence-based transgressions. This means that, the buyer tends to attribute the causes of these subsequent transgressions to the supplier's unwillingness to fulfil the expectations rather than its incapability. Such a negative perception of the supplier's goodwill takes a precedent role that overshadows the violation of competence trust, because of the one with a lack of goodwill being less likely to change under any circumstances and thus, its bad intentions will always be taken into account during subsequent transgressions (i.e. a stable cause suggested by Tomlinson and Mayer, 2009). However, the findings suggest such an overshadowing effect does not last forever until deadlock, but rather, gradually wears out as the buyer comes to

perceive that a lack of goodwill trust results in the same outcomes as a lack of competence trust. The case findings are consistent with Ferrin et al.'s (2007) restrictive schema perspective from the interpersonal trust violation literature. These authors argued that negative information regarding a partner's goodwill tends to persist, because only individuals with low goodwill would engage in opportunistic behaviour, while negative information regarding a partner's competence tends to be discounted as people believe that a competent person can occasionally make mistakes (ibid). The next subsection discusses the effect of the locus of the initial transgression on the severity of trust violation.

The locus of the initial transgression

This study is the first to involve empirically examination of the locus of transgressions in the inter-organisational trust violation context. The locus refers to the party responsible for the cause of a transgression, which can be internal (i.e. by the supplier) or external (i.e. by the buyer or by the situation). The findings show that the locus of the initial transgression has a differential effect on competence and goodwill trust.

With respect to the internal locus, the data suggest that such transgressions do not have any effect on the two trust dimensions (Tomlinson and Mayer, 2009). Conversely, regarding transgressions with an external locus, the data infer that a trust violation triggering transgression cannot be completely external to the supplier, as perceived by the buyer, because the latter's interests are harmed. For instance, in case 2, even though the initial transgression was triggered by RoHS imposed by the downstream customers and the government, it was not perceived to be completely an external locus, because unavoidable losses occurred. Thus, despite the transgression being of a situational trigger, as long as the buyer's interest is affected, it will at least attribute the cause to the supplier to some extent. In case 2, the buyer held the supplier's competence accountable, because it still expected the latter to contain the losses with its OQC and also to absorb the loss incurred.

Whilst for transgressions with an external locus, the findings suggest that the buyer does not hold the supplier's intentions accountable, because the cause is generated externally to the supplier. As a result, transgressions with such a locus do not engender the violation of goodwill trust. The extant literature has never investigated the locus of transgressions empirically at the inter-organisational level. Nevertheless, the data are consistent with interpersonal trust violation literature that an external locus dispels the negative impact on trust and emotions, in

general, without specifically targeting the two trust dimensions (Elangovan et al., 2007). It should be noted that adjacent literature on psychological contract violation suggests that transgressions with an external locus tend to trigger disruption attribution, which refers to the situation where a partner is willing, but unable, to fulfill obligations (similar to competence-based transgressions) (Mir et al., 2016). In contrast, transgressions with an internal locus tend to drive the reneging attribution, which pertains to where a partner is able, but unwilling, to fulfil its obligations (similar to integrity-based transgressions) (ibid). This means that, transgressions with an external locus dispel the buyer's suspicion of the supplier's intentions, which contains the violation to goodwill trust.

To summarise (*Table 6-1*), the dynamics of competence and goodwill trust in the trust violation stage can be explained by the interplay between multiple transgressions and ineffective reparative attempts, which over time widens the asymmetric perceptions (i.e. perceived gap) possessed by the buyer and the supplier. This perceived gap informs the level of resistance from the dyadic interaction and in turn, violates goodwill trust. If multiple transgressions occur across different operational domains, the buyer's competence trust is significantly violated, which accelerates the trust violation. Moreover, integrity-based initial transgressions have been shown to violate goodwill trust and also mitigate the buyer's attribution on subsequent competence-based transgressions.

Key concept	Extant study	Theoretical contribution
<i>Multiple transgressions</i>	Bell et al. (2002); Dirks et al. (2009); Li et al. (2013); Wang and Huff (2007); Janowicz-Panjaitan and Krishnan (2009)	Trust violation entails multiple transgressions rather than a single transgression
<i>Multiple interventions</i>		Trust violation is recouped with multiple ineffective reparative attempts (i.e. recalibration practices)
<i>Dyadic interaction</i>	Kim et al. (2009)	The supplier is not always willing to initiate reparative responses/attempts.
<i>Cross-domain failure</i>	Janowicz-Panjaitan and Krishnan (2009)	Cross-domain failures accelerate the trust violation
<i>The type of initial transgression</i>	Tomlinson and Mayer (2009); Wang and Huff (2007); Weber (2017)	The initial integrity-based transgression overshadows the following competence-based transgressions
<i>The locus of the initial transgression</i>		The initial transgression with an external locus mitigates the violation of goodwill trust

Table 6 - 1. An overview of theoretical contributions to the extant literature on trust violation

6.2 TRUST REPAIR

To begin with, research question two is:

What are the dynamics of competence and goodwill trust in the trust repair stage?

In response to RQ2, the findings show that the dynamics of the two trust dimensions go through three phases: the positive turning point, the repair of goodwill trust, and the repair of competence trust. That is, these three stages involve critical responses and factors that are critical for understanding changes in competence and goodwill trust during the trust repair stage.

6.2.1 Positive turning point

The extant literature has largely overlooked the transition from trust violation to the repair stages, because none has adopted a longitudinal research design to investigate both phases in one study. The positive turning point pertains to the willingness of the buyer and/or the supplier to initiate reparative responses in the subsequent trust repair stage (Dirks et al., 2009). It follows the deadlock characterised by the intensified conflict of interests that negatively affects the dyadic exchanges (e.g. products and information) and even halts the relationship (Hibbard et al., 2001).

In some literature, it has been argued that a trust violation is characterised by an intense negative affect (i.e. anger and frustration), which could lead to revenge and repentance behaviour (Wang and Huff, 2007). However, the findings show that a transient vacuum between the buyer and the supplier resulting from the deadlock provides some room for both parties to re-evaluate the relationship and engage in rational cost-benefit analysis. Consistent with Eckerd et al. (2013), the buyer and the supplier still remain rational and unbiased so as to be able to make an accurate assessment of the value of the relationship continuation despite experiencing high emotional distress. This assessment is conducted by senior management, which is responsible for the overall performance of the firm (as the violation has already brought about cumulative losses).

According to the data from the current work, the buyer and supplier conduct a cost-benefit analysis considering a range of different factors: relational investments (all cases); future business opportunities with the other party (all cases); potential disruptions that may

occur during the switching of suppliers (cases 1 and 2); new market opportunities (cases 1 and 3); the quality of alternatives available (all cases); and potential delays to downstream customers (cases 1, 2, and 4). The assessment the dyad undertakes is consistent with Tahtinen and Vaaland's (2006) framework that explores a comprehensive set of attenuating factors with respect to relationship termination assessment (*Table 6-2*). These factors provide reasons for the buyer and the supplier to maintain the relationship before proceeding to the complete disengagement stage that leads to relationship dissolution (Halinen and Tahtinen, 2002). In particular, during the phase of positive turning point, the shadow of the future, manifested in the expected future gains, is more pronounced than the shadow of the past, manifested in the incrementally accumulated relational capitals (e.g. trust). This may explain the trajectory of inter-organisational relationships towards active repair as opposed to relationship dissolution, where heavy financial burden and low expected values are generally present (Tidstrom and Ahman, 2006).

Attenuating factor	Description	Case
<i>Loss of relational investments</i>	Adaptations made in actor bonds Define existing relational investments, and possible unrealized gains Lost future business opportunities with the partner	Case 1 (buyer) Case 1 (supplier) Case 2 (buyer) Case 2 (supplier) Case 3 (supplier) Case 4 (buyer)
<i>Costs of the dissolution process</i>	Resources required to prepare and to carry out less arbitration, court trial etc. Disturbances in ongoing production during the dissolution	Case 1 (buyer) Case 2 (buyer) Case 3 (buyer) Case 4 (buyer)
<i>Possible sanctions for future business</i>	Power play from the other side (e.g. exclusion from the bidder's list) Mass media exposure Competitor's take-over of our future position to the partner Sanctions from other actors Possible effect on new market opportunities	Case 1 (supplier) Case 1 (buyer) Case 2 (supplier) Case 2 (buyer) Case 3 (supplier) Case 4 (buyer) Case 4 (supplier)
<i>Network limitations</i>	Number of and quality of alternative market actors compared to an existing partner Reduced competition in the supplier market when cutting out partner	Case 2 (buyer) Case 3 (buyer) Case 4 (buyer)
<i>Set-up costs</i>	Necessary changes in activity structure with new partner/or in-house Effect on own resource utilisation and new resource demands Cost and risk of disturbances and delays (e.g. project progress)	Case 1 (buyer) Case 2 (buyer) Case 3 (buyer) Case 4 (buyer)

Table 6 - 2. Attenuating factors for relationship dissolution assessment adapted from Tahtinen and Vaaland (2006)

In addition to this, the cost-benefit analysis can also be effectively facilitated by third-parties, such as a distributor (i.e. case 4). This is consistent with Yu et al. (2017), who pointed out that third parties can actively persuade the buyer and the supplier with respect to the positive and negative consequences of repairing and not repairing. As an outcome of this cost-benefit reassessment, the focus of both parties changes from specific transgressions that occurred in the trust violation stage to the overall relationship they would like to maintain. Thus, it ultimately drives the buyer and/or the supplier to initiate contact and directly determine the resources and intensity of reparative efforts. The case findings suggest that the party ending up with a higher net output of the cost-benefit analysis tends to initiate reparative responses. The violated buyer and the violating supplier can initiate reparative responses by approaching its counterpart. Following the positive turning point, at least the buyer or the supplier must be willing to repair and initiate reparative responses with the other party (Ren and Gray, 2009). The trust repair process hereby begins.

6.2.2 The repair of goodwill trust

The findings show that the trust repair process starts with goodwill trust and this primacy is for two reasons. First, as previously mentioned, the trust violation stage ends with a violation of goodwill trust, because i) the buyer begins to doubt the supplier's willingness to fulfil the buyer's expectations, rather than their capabilities to do so and ii) the widened conflict of interests resulting from the trust violation stage has yet to be resolved. In order to reconcile the conflict of interests, the buyer relies on the supplier's corporate staff, who have the authority to make strategic decisions (i.e. reallocation of benefits shared by the dyad and increased investment). Second, the buyer gradually realises that those transgressions and ineffective reparative attempts have been caused by a lack of senior management intervention by the supplier. This means that without the full support of the senior management of the supplier, the buyer believes that the repair of competence trust cannot be sustained and effectively implemented. That is, senior management involvement conveys a strong signal that the corporate staff are willing to motivate and facilitate the following coordination and collaboration at the operational level. This is consistent with Salo et al.'s (2009) perspective that the supplier's competence can only be sustained once the buyer believes it is willing to show strong commitment and intentions to repair (i.e. the repair of goodwill trust).

No prior research seems to have explicated the sequence of the repair of goodwill and competence trust, for it has only shown that goodwill trust is more difficult to repair than that of competence (Janowicz-Panjaitan and Krishnan, 2009). The case findings add to the literature by delineating why goodwill trust is repaired prior to competence trust. The findings have also led to the identification of four critical factors that drive the repair of goodwill trust, senior management involvement, expression of commitment, relationship-specific investment, and economic performance. These factors are explained in the following subsections.

Senior management involvement

Senior management involvement is key to repairing goodwill trust. That is, the findings have revealed that this type of trust is repaired more effectively in cases where the upper hierarchy of senior management is involved (e.g. general managers and CEOs), because they have more authority and resources to make strategic decisions (Kroeger, 2012). Specifically, senior management involvement not only helps to signal proportionate commitment and agreement, for it also convinces the buyer that those commitments and relationship-specific investment can be effectively enforced through a top-down approach (Lewis et al., 2013). Hence, with senior management involvement full compliance with the subsequent operational and functional coordination is perceived as being more likely. Without this involvement, the buyer does not believe that competence can be repaired, because the promises and agreements put forward by the supplier will not be effectively implemented, for this resembles the notion of reparative attempts enacted during the trust violation stage in the eyes of the buyer.

Expression of commitment

Consistent with Bell et al. (2002), the supplier's senior management demonstrates a strong commitment to the buyer by giving assurances and promises that it is willing to fulfil the buyer's expectations. For instance, in case 1, the supplier clarified that the request to quit was not a corporate decision, but rather, was sent by their operating staff. Moreover, the supplier reiterated that it saw the buyer as an important partner and intended to continue that way. This is in line with Smith (2002), who stated that the supplier aims to clarify its benign intentions and long-term orientation with the buyer.

The data have revealed that the supplier can also clearly delineate specific and detailed approaches that it will adopt to minimise the buyer's uncertainty. For example, in case 4, the supplier coordinated with the buyer and eventually proposed that the updated model would be developed in Japan under tougher manufacturing and testing conditions, which would involve it being tested in the buyer's lab for one week before the agreed deadline. This is consistent with Ren and Gray (2009), who held that mutual communication overcomes indifferences in terms of values and expected future collaborations.

Whilst in case 3, the supplier's general manager leveraged his friendship and interpersonal connection with the buyer's general manager to demonstrate the supplier's intention of relationship continuation and willingness to do whatever it took to repair the trusting relationship. In accordance with Wang et al. (2014), it was found that the expression of commitment represents an interactional justice approach that focuses on the social element of business exchanges. The supplier may demonstrate "*how much attitudinal and emotional attachment they have towards the buyer*" (ibid, p. 376). As a result, the buyer and the supplier's expectations can be realigned (Weick et al., 2005).

Relationship-specific investment

The extant literature has overlooked the significance of relationship-specific investment in repairing goodwill trust. This can be captured by distributive and procedural justice approaches, as proposed by Wang et al. (2014), but the authors do not empirically verify it. The findings have shown that relationship-specific investment may take the forms of financial sacrifice and/or external investment. These responses are aimed at reconciling the conflict of interests perceived by the dyad in the trust violation.

In terms of financial sacrifice, the data have uncovered a range of reparative responses that could be adopted. For instance, in case 2, the supplier agreed to absorb additional manufacturing costs with the buyer's preferred material. In case 3, the supplier directly and voluntarily offered a set of financially favourable terms and conditions to be imposed by the buyer. The financial sacrifices made by one party would directly transfer into another's interests. This will repair goodwill trust, because the notion essentially indicates whether the supplier shows a genuine care about the buyer's interests. This is consistent with Jap's (2001, p. 86) notion of 'pie of benefits', which describes inter-organisational collaboration as incremental efforts from a dyad to "*give each other a greater benefit that could not have*

existed without the idiosyncratic contributions of the exchange partners” (Cheung et al. 2011, p: 1061). Thus, if the supplier is willing to make financial sacrifices (e.g. additional manufacturing costs, self-imposed control, and direct profit), the buyer will perceive itself as having the larger share of the benefits from the supplier.

With respect to external investment, the findings reveal a series of reparative responses. For instance, in cases 1 and 2, the supplier invested more resources in improving quality control by recruiting more engineers and redesigning the existing tooling. In case 3, the supplier decided to invest in a manufacturing centre in China dedicated to the buyer’s production and regional service centres in Europe and South America. This is consistent with Wang et al.’s (2014, p. 376) distributive justice approach, *“if a supplier invests equitable amounts of efforts, resources, and time into the disruption resolution as its buyer does”*, which signals a demonstration of genuine concern and benign intentions by the supplier.

As a result, relationship-specific investment repairs goodwill trust, not only because the supplier directly reallocates a proportion of benefits to the buyer (i.e. financial sacrifices), which signals the former’s intentions to make up the latter’s losses caused by the violation, but also, because the supplier engages in substantive responses that demonstrate a long-term commitment (i.e. external investment), one that puts it in a more vulnerable position. Those responses aim to show the supplier’s perceived repentance (Dirks et al., 2011) and convince the buyer to stay in the relationship by giving up its profits to the buyer so that the relationship is more financially attractive to that party.

Economic performance

The data reveal that an increase in economic performance during the trust repair stage may help the repair of goodwill trust. The case findings reveal that during the trust repair stage the buyer tends to take extra risk by leaving behind the distrust rooted in the violation stage, providing opportunities and collaborating with the supplier. If the outcomes turn out to be beneficial and rewarding to the buyer and the supplier (e.g. expanded market share and increasing projects), the former’s goodwill trust will be further repaired. In line with Jap (1999), the profit expansion indicates that the combined interests from the dyad have been enlarged, thereby signalling a further increase of goodwill trust. In addition, this is consistent with Dekker (2004), who argued that trust can be (re)built through deliberate risk-taking behaviour.

So far, the reason why goodwill trust is repaired prior to competence trust and the critical factors associated with the repair of goodwill trust have been discussed. It should be noted that senior management from the dyad determines corporate arrangements (e.g. relationship-specific investment and commitment), which pave the way for operating staff to start the reparative responses targeted at competence trust.

6.2.3 The repair of competence trust

The repair of competence trust begins after goodwill trust is repaired to the point that the buyer and the supplier have resolved any conflict of interests and realigned expectations towards future collaboration. In this phase, the deals and promises agreed by corporate staff should be complied with and implemented by operating staff from each firm, this ultimately reflecting the match between words and deeds (Moorman et al., 1993). For example, in case 1, the supplier's corporate staff agreed to redesign the existing tooling and increase the quality control. However, operating staff were initially incapable of achieving the level required by corporate arrangements. So, the supplier's senior management transferred a VP from their more technically advanced plant in China back to Taiwan to conduct three-month intensive training on quality control and tooling redesign. In case 4, the supplier's corporate staff promised to deliver the improved model within a pre-specified deadline and under tougher conditions. However, those constraints over time and conditions were surmounted by operating staff who executed the plan in line with the corporate arrangements. In the repair of competence trust stage, boundary spanners (e.g. R&D engineers, QA/QC engineers, and project managers) at operational and functional levels between the buyer and the supplier worked together to coordinate and implement reparative responses and solutions in accordance with corporate arrangements aimed at repairing the supplier's competence.

Consistent with Bottom et al. (2002), if reparative responses are not efficiently and effectively conducted by operating staff, those corporate arrangements made by senior management would be deemed as 'cheap talk'. As a result, the repair of competence trust could terminate prematurely, which would directly affect relationship continuity (Wang et al., 2014). Interestingly, the data show that the repair of competence trust tends to be gradual and less sensitive to reparative responses offered compared to its violation. This is because the buyer only recalibrates the supplier's competence with various performance indicators conducted periodically. As previously mentioned, the buyer tends to assume that early competence improvement from the supplier in the trust repair stage is elusive and short-term, because of

multiple transgressions and ineffective reparative attempts. It tends to observe the supplier's competence for an extended period of time to ensure the quality and production has stabilised and the causes of transgressions have been eliminated. The findings have led to the identification of three factors that affect the repair of competence trust, namely replacement of boundary spanners, the buyer's assistance, and overall perceptions of the supplier's reparative efforts.

Replacement of boundary spanners

The findings show that boundary spanners who are associated with the initial transgression and trust violation stage should be replaced to repair competence trust effectively. This is because they tend to form fixed expectations regarding their counterparts over the extended period of time of the violation. For example, in case 3, the boundary spanners from the buyer and the supplier had a tense relationship in which the former's boundary spanners thought the latter's were incompetent and unresponsive, while the supplier's boundary spanners perceived the buyer's to be nit-picking and unreasonable. This means that boundary spanners were carrying the weight of the past, which would have led to continuous opposition between the buyer and the suppliers, when this stage was requiring extensive operational coordination. That is, this negative affect and cognition would most likely have undermined the effectiveness of the follow-up operational and functional collaboration in the repair of competence trust. So, it would appear that organisations replace boundary spanners that have experienced the trust violation stage to provide the firm with an opportunity to 'reset' the relationship. The extant literature has not explained the effect of boundary spanners in the trust violation and repair process. Hence, this study provides a novel understanding of the effect of boundary spanners on the repair of competence trust.

Buyer's assistance

Whilst Kim et al.'s (2009) bilateral dynamic model emphasises buyer's resistance, the findings reveal that it can also take an active role in assisting the supplier, especially in the early phase of competence trust repair. At the outset of this phase, the supplier may not possess the know-how to solve the issue alone. Hence, the buyer's assistance is critical to the process in that its involvement can provide certain leverage, if a problem cannot be dealt with by the supplier

alone and requires cooperation among external parties (e.g. upstream suppliers and/or other third-party quality certifiers). For instance, in cases 1 and 2, the buyer assisted the supplier in re-certifying the competence of the supplier's suppliers, which eliminated any competence loopholes stemming from the second tier and third tier suppliers.

The findings suggest that it is critical to engage in extensive collaboration across organisational boundaries. From the supplier's perspective, without constant and timely feedback from the buyer with respect to its technical performance on the production line, the supplier cannot adjust its parameters setting accordingly and achieve permanent solutions. In addition to information sharing, the buyer can also offer more intensive on-site assistance that troubleshoots faults (e.g. workflow quality assurance, design, and production) and eliminates them collaboratively in this critical transition. Overall, the buyer and the supplier jointly plan operational tasks, decide on performance measurements, and solve technical issues. The joint relationship effort facilitates the buyer and the supplier to "*co-align their operations and processes*" (Nyaga et al., 2010, p. 104).

Another critical effect of the buyer's assistance is that it serves as a less intrusive way of monitoring the supplier's performance. This is consistent with Yilmaz and Kabadayi (2006) view that monitoring can facilitate cooperation by reducing the uncertainty and risk perceived by the buyer, which in turn, allows it to assess the supplier's performance accordingly and ensure compliance. Over the initial competence trust repair process, where preventive responses are yet to be devised, the buyer has less substantive information to verify the supplier's conduct. This extensive involvement alleviates the buyer's concern by enabling more first-hand information on the supplier's factory to be directly gathered.

The overall perception of the supplier's reparative efforts

Consistent with Dirks et al. (2011), the repair of competence trust has been evaluated based upon how effective the supplier is in eliminating the causes of transgressions that occur in the trust violation stage. The buyer relies on objective indicators that convince it that the supplier has successfully eliminated all causes of the probable transgressions. For example, in cases 1 and 2, through the effective execution by operating staff in fulfilling the corporate arrangements, the supplier had heightened its quality control and overhauled its manufacturing processes. After ten continuous deliveries without defects, the supplier was removed from the observation list, because the buyer was convinced that its competence had stabilised. Thus, the

effectiveness of the competence trust repair phase is ultimately determined by the efficiency of devising preventive measures and the consistency of executing these (Gillespie and Dietz, 2009). Hence, the buyer will assess the supplier's performance over an extended period of time to decide whether or not the responses are truly preventive.

Apart from perceived prevention, the buyer also evaluates the overall competence of the supplier compared to the pre-transgression stage after reparative responses are provided. This notion reflects the service failure recovery literature. Consistent with Hess et al.'s (2003) contention, the pre-transgression competence seems to serve as an anchor to the buyer's ex-post assessment of the supplier's reparative effort. If the supplier is able to bolster its overall competence, which involves the transgression-affected and non-transgression-affected domains, this will result in a 'recovery paradox', thereby leading to a higher post-repair satisfaction and competence trust (Primo et al., 2007).

6.2.4 The differential outcomes between pre-transgression and post-repair trust

From the findings, it is clearly evident that trust repair leads to three different outcomes (i.e. up-, down-ward recalibration, and restoration) with respect to competence and goodwill trust, respectively. This research provides a solid empirical foundation regarding the outcomes of trust repair (Gillespie, 2017). The majority of the previous studies have hinted that trust is no longer repairable once it is violated (e.g. Janowicz-Panjaitan and Krishnan, 2009; MacDuffie, 2011). In fact, some scholars have argued that trust violation may not warrant reparative efforts or may lead to intentional downward recalibration (Stevens et al., 2015; Villena et al., 2011). This study has elicited that the three outcomes of trust repair occur in relation to different contingencies associated with the trust violation and repair stages. Most importantly, this research has empirically verified that upward recalibration is not just an illusion. This is consistent with Wang et al. (2014), who argued that whilst, trust repair serves as a relational threat, it is also an opportunity for achieving a higher state of trust in the post-repair stage. The differential magnitude and timing of the abovementioned reparative responses implemented by the buyer and the supplier will determine the outcomes of post-repair trust.

To summarise (*Table 6-3*), competence and goodwill trust are repaired sequentially. Each repair is initiated at different times and requires different responses. To be specific, goodwill trust needs to be repaired before competence trust. It is more sensitive and responsive to reparative responses induced by both parties, while competence is less responsive to these and

tends to be only gradually repaired, because the supplier's competence requires an extended amount of time to be deemed effective. The effectiveness of competence trust repair depends on whether boundary spanners are replaced, the buyer offers assistance to the supplier, and/or the reparative responses bolster the domains of competence that have not been affected by the trust violation. The findings also empirically verify Lewicki and Bunk's (1996) hypothetical differential outcomes of trust repair, namely upward and downward recalibration as well as restoration, with respect to the two trust dimensions. The factors and reparative responses that contribute to differential outcomes have been clearly identified. It should be noted that trust repair is a process that requires significantly greater resources and strategic shift when compared to the trust violation process. In sum, the whole process reflects the notion that *trust leaves on horseback, but arrives on foot*.

Key concept	Extant study	Theoretical contribution
<i>Goodwill trust</i>	Malhotra and Lumineau (2011); Connelly et al. (2018)	Goodwill trust is repaired initially Goodwill trust is more responsive/sensitive to reparative responses
<i>Senior management involvement</i>	Crossley (2015); Li et al. (2013); Wang et al. (2014)	Higher organisational hierarchy the more effective it is to repair goodwill trust
<i>Expression of commitment</i>		Confirmed with literature
<i>Relationship-specific investment</i>		Significant profit reallocation (i.e. financial sacrifice) repairs goodwill trust External investment signals forward-looking intentions
<i>Economic performance</i>		Joint profit expansion repairs goodwill trust
<i>Competence trust</i>	Malhotra and Lumineau (2011); Connelly et al. (2018)	Competence trust cannot be effectively repaired unless goodwill trust is repaired first. Competence trust is less responsive/sensitive to reparative responses
<i>Buyer's assistance</i>	Crossley (2015); Li et al. (2013); Wang et al. (2014)	Buyer's involvement facilitates competence trust repair
<i>Replacement of boundary spanners</i>		Replacement of boundary spanners facilitates competence trust repair
<i>The overall perception of the supplier's reparative efforts</i>		Competence trust repair is evaluated based on i) perceived prevention of the cause of transgressions and ii) improvement across affected capability domains

Table 6 - 3. An overview of theoretical contributions to the extant literature on trust repair

CHAPTER SUMMARY

This chapter has discussed the case findings in light of the background literature and the research questions. Specifically, it has provided responses to the two main research questions through four dyadic longitudinal case studies involving both the trust violation and repair

stages. Chapter Seven concludes the thesis with a discussion on the contributions of this research, its limitations and suggestions for further research are provided.

CHAPTER SEVEN: CONCLUSION

INTRODUCTION

The final chapter outlines the contributions, implications, and limitations of the research. Section 7.1 considers the theoretical and empirical contributions, whilst section 7.2 presents implications for managers and organisations. Section 7.3 discusses the limitations of the work and recommendations for future research.

7.1 THEORETICAL CONTRIBUTIONS

This study advances research on inter-organisational trust violation and repair in several respects. In accordance with the literature, five main gaps have been identified, including: i) single focus of time, ii) single dimension of trust, iii) single party focus, and iv) single outcome of trust repair.

First, regarding single focus of time, past studies have largely relied on cross-sectional data, assuming that trust violation is triggered by a single transgression and trust repair is evaluated by a series of reparative responses, simultaneously (e.g. Wang and Huff, 2007; Wang et al., 2014; Yu et al., 2017). This single focus of time prevents a more nuanced understanding of how trust violation is progressed over time. This study has uncovered that multiple loops of trust violation comprise the discovery phase (where a transgression is detected), the resistance phase (where a transgression is verified), and the intervention phase (where reparative attempts are provided). These three phases repeat over time with the accumulation of multiple transgressions until the trust threshold is reached. This accelerates the speed of trust violation into the escalation phase and eventually results in a deadlock. On the other hand, in the trust repair stage, the findings delineate that various reparative responses are implemented across different time periods. In general, corporate arrangements should be made between the buyer and the supplier's senior management that involve the expression of commitment and relationship-specific investment. Those corporate arrangements require extensive operational collaboration to be effectively implemented and realised. Moreover, the trust violation and repair stages are essentially bridged by the positive turning point. In this research, the positive turning point has been characterised as a transient period that begins with

deadlock (i.e. the end of the trust violation), when both parties emphasise losses caused by the previous transgressions. Over time, as the buyer and/or supplier engage in rational cost-benefit analysis, such focus on the past transgressions gradually changes to consideration of the broader relationship (i.e. the continuation of the relationship). The party with a higher cost-benefit ratio tends to initiate reparative responses. In addition, by examining trust violation and repair together, this advances understanding of the rationale behind the different reparative responses enacted and explains why some cases are more difficult to repair than others.

Second, the extant literature on trust violation and repair has relied on an aggregated inter-organisational trust. For this study, the overall trust was divided into two constituting dimensions: competence and goodwill trust. This is in response to the call from Connelly et al. (2018) to understand the dynamics of competence and goodwill trust with respect to their consequences across different contexts (i.e. trust violation and repair) and over time. This study has uncovered that competence and goodwill trust are violated in a differential, but interdependent manner. It has empirically confirmed that competence trust is easier to violate (i.e. more sensitive to transgressions) than goodwill trust, because information pertaining to the former is easier to discover and substantiate. Following this, it has been revealed that early goodwill trust violation overshadows competence trust violation, while an extended period of the latter engenders goodwill trust violation. This means that the violation of goodwill trust reflects the character of the supplier (i.e. being opportunistic) and tends to persist over time. Moreover, multiple competence-based transgressions not only signal that the supplier is unwilling to allocate sufficient resources to solving the transgressions, for they also, over time, impair the buyer's interests. This is perceived to undermine the buyer's goodwill trust in the supplier. In the trust repair stage, the study has illustrated how goodwill trust is repaired earlier and more responsively than the competence form. This has been explained by i) the deadlock being triggered by the violation of goodwill trust; and ii) competence trust repair is elusive and unsustainable without goodwill trust repair in place. In addition, reparative responses targeted at goodwill trust take more immediate effect (e.g. expression of commitment between senior level management and relationship-specific investment) than competence trust, which requires an extended period of time to be verified and stabilised. In the later phase of the trust repair stage, the repair of competence and goodwill trust tends to reinforce each aspect, thereby creating a positive spiral, which accelerates the speed of trust repair.

Third, prior studies have greatly focused on behaviour and responses signalled by the supplier for causing transgressions and initiating reparative responses, whilst assuming that

the buyer plays the role of a passive observer (Kim et al., 2009). In fact, this study has shown that the buyer plays an active role in the trust violation stage and invariably determines its outcome via the implementation of punitive clauses and imposition of further operational constraints on the supplier (i.e. buyer's resistance). In addition, this research has revealed that the buyer's actions significantly shape the trust repair process. The buyer can initiate reparative responses to renegotiate and clarify expectations and commitment with the supplier; offer continuous assistance (e.g. technical support and power leverage to drive the supplier's suppliers); and/or reward the supplier with more projects to keep that party motivated. Thus, with more engaging buyers, trust repair can be effectively implemented at a greater speed than were it otherwise.

Fourth, there has been no prior research measuring pre-transgression and post-repair trust and hence, the overall outcome of trust repair was previously unknown (Gillespie, 2017; Kramer and Lewicki, 2010). For the current study, the different levels of trust between the pre-transgression and the post-repair trust stages were measured. The adopted longitudinal approach allowed for the opportunity to compare each case with differential outcomes with the corresponding attributes of transgressions, reparative responses, and relationship-specific factors. This work has involved empirically exploring the 'double-edged' nature of trust repair, as proposed by Wang et al. (2014), and has verified that trust repair poses relationship threats and opportunities to buyer-supplier relationships. The findings reveal that trust repair can result in upward-, down-ward recalibration or restoration in relation to competence and goodwill trust. Moreover, based on the comparative case studies, the study offers prescriptive insights into how each potential post-repair outcome is derived based on relationship characteristics from the pre-transgression stage, to the dynamics of trust violation and through to the trust repair stages.

Apart from theoretical contributions, this study also has provided some methodological ones, which will help future endeavours in this research area.

7.2 METHODOLOGICAL CONTRIBUTION

The extant literature has relied heavily on quantitative methodologies to measure the severity of trust violation or the effectiveness of reparative responses in mitigating violated trust (e.g. Wang and Huff, 2007; Wang et al., 2014). However, these methodologies have some shortcomings, such as: (i) trust invariably involves constant adjustments to expectations; and

(ii) trust thresholds exist that buffer the negative effect of transgressions prior to the threshold being reached and accelerate the trust violation after this. This means that quantitative methodologies may not sufficiently explain the process of trust violation and repair. However, the vast majority of prior trust violation and repair studies at the inter-organisational level have involved quantitative methodologies (e.g. surveys and scenario-based experiment) (e.g. Wang and Huff, 2007; Wang et al., 2014; Yu et al., 2017). This study alternatively contributes to the field through the adoption of a multiple case study method. This qualitative and longitudinal inquiry allowed for exploring the interaction between the buyer and the supplier along with the resulting changes of trust over time during its violation and repair stages. Moreover, it has facilitated understanding of the rationale of why particular actions and reactions are signalled and specific reparative responses are implemented. Further, this longitudinal perspective has allowed the researcher to streamline the temporal dynamics of transgressions, ineffective reparative attempts, the deadlock, and reparative responses, with respect to the level of competence and goodwill trust.

The second methodological contribution is with regards to the dyadic perspective in the data collection. Kim et al. (2009) suggested that the buyer and the supplier both interact dynamically in the event of trust repair. In addition, trust held by the individual or both parties would predict the cooperative behaviour (Zaheer and Zaheer, 2006). One-sided data prevent insights into the interaction between the dyad and the underlying reasons and motives behind the two parties' reactions. Whilst this study has captured the views from the dyad, the buyer's perspective has been given more emphasis, because the focus has been on supplier-induced transgressions, which occur more often than buyer-induced ones (cf. Reimann et al., 2017). Nevertheless, the ability to collect the dyadic view provides a holistic understanding of how and why trust violation is caused, perceived, and dealt with and why a particular reparative response is offered by one or both parties. Additionally, given the highly sensitive nature of the data, collecting these from the party (the supplier) that causes a transgression is extremely difficult. A series of recommendations to collect such data is put forward, including: (i) capturing the buyer's perspective first; (ii) collaborating through third-party distributors; (iii) the researcher involving and familiarising him/herself with the boundary spanners for an extended period so that the conflict has time to 'cool off'; and (iv) collecting data from multiple respondents across hierarchical level domains from a target company.

The final methodological contribution is the use of graphical illustration in the data collection and analysis phases of this research study. In the data collection phase, the

respondents were asked to follow this illustration to inform about the trust violation and repair stages. During the data collection phase, the respondents were also asked to map out the dynamics of trust while describing it. Then, the graphical illustration was constantly compared with and contrasted to the narratives, which resulted in some discrepancies over the magnitude of the trust changes with respect to specific transgression and reparative attempts/responses. The researcher then asked key respondents to verify the accuracy of the explanations and graphical representation. The use of graphical illustration is not only a practical way to collect data, for it is also a powerful means to present rich relationship data over time.

7.3 MANAGERIAL IMPLICATIONS

This section discusses the key implications for managers and organisations both to reduce the negative effects of trust violation effectively and speedily repair violated trust. These can be divided into three aspects: buyer-related, supplier-related, and both. With respect to buyer-related implications, two approaches are recommended targeted at the trust violation stage, as follows.

Intervene in the trust violation early: The findings show that trust violation is caused by a gradual exacerbation due to cumulative transgressions and ineffective reparative attempts. The buyer tends to treat the initial or early transgressions as regular supply chain disruptions and allocates fewer resources than the actual required level. Thus, if the buyer pays closer attention to changes in trust, especially when recalibration approaches are not effective in moving on from transgressions, thus resulting in mismatched reparative attempts, then middle and senior level staff can intervene to reassess the situation and optimise the level of resources needed to mitigate the trust violation (i.e. the use of reorientation approaches).

Carefully use punitive clauses: The study has demonstrated that the buyer generally adopts standard responses specified in the contract in response supplier induced transgressions. The buyer automatically heightens its inspection criteria and charges the supplier compensation. As more transgressions occur, the buyer tends to impose more stringent terms and conditions on the supplier to protect its own interests and also, to get the lost ground back regardless of

the supplier's operational challenges. Such action not only leads to the supplier's operational difficulties, for it also harms the supplier's interests, because more resources and time are required for it to fulfil the buyer's expectations under tougher circumstances. This often results in a tit for tat situation, where the supplier decides to get revenge or gain back control from the buyer, thereby exacerbating the situation. If the buyer can take a more assisting stance and demonstrate compassion to help the supplier on technical and social aspects, the latter may not show a high level of reluctance to participate.

With respect to the trust repair stage, the buyer's managers are recommended to do as follows.

Assist the supplier in the early trust repair stage: This study illustrates that senior management involvement in the dyad realigns expectations and leads to agreement on corporate arrangements, which pave the way for operating staff to execute the subsequent reparative responses accordingly. That is, operating staff between the dyad, in turn, collaborate extensively to achieve effectively and practically those arrangements. However, sometimes the supplier will encounter difficulties in the execution of the agreed tasks (e.g. incompetence, lacking the information needed, and lack of influence on their suppliers). If the buyer is willing to provide assistance, such as technical support and on-site co-supervision to the supplier during difficult periods, this would speed up the repair of the latter's performance. Moreover, such action also provides an opportunity for a less intrusive way of monitoring that can also lower the perceived uncertainty of the buyer in the early repair stage.

Increase the order placed or projects when appropriate: If the supplier makes efforts in relationship-specific investment (e.g. investment in new plant, machinery, and/or quality assurance systems; recruiting more R&D and QA engineers) and achieving preventive solutions (e.g. stricter quality control and changes of manufacturing processes), the buyer's perceived competence trust in the supplier will gradually be repaired. If the buyer can reward the supplier with more projects or increased volume, this action not only demonstrates the buyer's reciprocity of goodwill trust, for it also motivates the supplier to keep up the reparative efforts, thereby creating a positive spiral.

This study's outcomes also stimulate several practical implications for the supplier in the trust violation and repair stages.

Mitigate integrity-based transgressions quickly and effectively: This study empirically confirms that integrity-based transgressions cause higher severity to the buyer's goodwill trust. It has been shown that sometimes the supplier does not intend to engage opportunistically (e.g. strategic and operational decisions based on a rational assessment), but its actions are perceived to be integrity-based transgressions. This means that, if the supplier maintains clear communication channels and information sharing across the dyad, the buyer will not be surprised and can implement complementary measures beforehand, thereby lowering the damage.

Avoid failing across multiple domains: If the supplier fails to meet performance targets across multiple domains, the buyer's competence trust will be significantly violated. Also, cases with cross-domain failures generally take a longer time to repair. Thus, if the supplier can pay early attention to cross-domain failures, they can allocate more resources to quality control and troubleshooting to contain them. This means that, the supplier has to identify potential 'complications' stemming from the initial transgression and effectively contain those. In particular, the supplier needs to be cognizant of what domains the buyer values the most so that it can at least know what to safeguard with more resources.

Supplier's reactions matter: The study outcomes suggest that disproportionate reactions enacted by the supplier in the trust violation stage are, over time, perceived as integrity-based transgressions by the buyer. Hence, if the supplier can adhere to proportionate reactions (e.g. demonstrations of support, concern, and the willingness to resolve transgression; attempts to allocate proportionate resources in devising effective reparative attempts), the violation to the buyer's goodwill trust can be mitigated. In addition, with proportionate reactions, the buyer and the supplier are more likely to focus on the problems operationally and constructively, thereby being less likely to exacerbate the conflict of interests.

Apart from those practical implications from the buyer and the supplier, respectively, the following considers the practical implications recommended for both parties in the trust repair stage.

Senior management involvement: When both the supplier and the buyer engage in renegotiation after deadlock, parties with a higher level of senior management involvement not only are perceived to be sincerer in expressing commitment to resolving matters, for they also possess more authority and power to make proportionate corporate arrangements on relationship-specific investment (i.e. financial sacrifice and external investment). In addition, with more senior management involvement, firms are believed to implement the agreements and promises made in the corporate negotiation more effectively, because they have more power to motivate and drive their operating staff.

Replacement of boundary spanners: Over an extended period of trust violation, boundary spanners, especially those at the operating level, tend to form expectations and stereotypes about their counterparts' ability and intentions, which can eventually turn into grudges. Thus, it is recommended that boundary spanners at the operating level should be replaced during the period where extensive operational coordination takes place, so new ones can solely focus on the operational tasks at hand without being biased by the weight of the past.

Trust violation can be benign if repaired properly: This study has revealed that the outcome of trust repair can be positive leading to upward recalibration of post-repair trust under certain contingencies. Transgressions inevitably occur from time to time, but not all disruptions will engender a trust violation (might be contained before reaching the threshold). If both the buyer and the supplier manage individual transgressions properly and engage in reparative responses as advised, this can also be an opportunity for the inter-organisational relationship to reach a higher level of trust. Notably, the outcomes of this study confirm the service failure recovery literature (mainly concerning organisation-consumer relationships), which reports that the notion of 'recovery paradox' also exists at the inter-organisational level in which the post-repair trust can be more positive than the pre-transgression stage.

7.4 LIMITATIONS AND FUTURE RESEARCH

This study has not been without limitations, some of which will serve to identify future research avenues that need addressing. First, the emphasis of competence and goodwill trust differs between buyer and supplier (Korsgaard et al., 2014; Villena and Craighead, 2016). That is, whilst the dyadic view has been captured, this study has been focused mainly on the buyer's perspective as the trustor, because it is the party, the interests of which are commonly impaired due to transgressions induced by the supplier (Wang et al., 2014). However, asymmetric perceptions of trust may exist between the buyer and the supplier, because trust violation can be interpreted differently based on the standpoint the researcher takes. Thus, further studies should investigate trust violation and repair in the event of buyer-induced transgressions.

Second, this study involved asking the respondents to identify the first major trust violation in the business relationship. Thus, trust violation and repair investigated by the research refer to 'pristine' trusting relationships (Kramer and Lewicki, 2010). Although this study confirms the presence of a recovery paradox stemming from service failure recovery literature, the extant literature has never examined what would happen when the second major trust violation, if it happens, occurs in which service failure recovery literature shows the effect of a double deviation. This would mean that the relationship could not be recovered to the pre-transgression level anymore. In a similar vein, future research should explore the effect of a second trust violation on repaired trust (*ibid*).

Third, this study has captured two widely acknowledged trust dimensions (i.e. competence and goodwill trust) in the trust violation and repair process (Lui and Ngo, 2004). However, there are other trust dimensions identified in the literature. For example, institutional-based trust has received increasing attention in the extant literature (Bachmann and Inkpen, 2011). This refers to impersonal arrangements that comprise legal regulations, corporate reputation, and contracts (*ibid*). Future research may incorporate this additional dimension into the trust violation and repair process. For instance, institutional-based trust may be violated initially when the supplier-induced transgression signals a breach of the contract. In response to this, the buyer may be tempted to increase institutional-based trust by adding more contracts. Then, the repair of institutional-based trust may dispel or discount the need to repair competence and/or goodwill trust.

Fourth, the case study research strategy was adopted to understand how trust violation and repair unfold in a specific environment, which was the Taiwanese electronics industry for

this thesis. Thus, the findings collected and analysed are then restricted to a specific context. Despite some studies having emphasised the importance of situated knowledge from case study research (Flyvbjerg, 2001), it inherently limits the findings drawn from this thesis being extended to additional settings (Lee and Baskerville, 2003). The findings may not be empirically generalisable across all countries or industries. Hence, the findings would have to be restricted to cases that share similarities to those investigated in this research. For instance, the findings can be applicable to critical (interdependence), leverage (supplier dependence), and bottlenecks (buyer dependence) quadrants from Kraljic's model, because the thesis has involved sampling the four cases with respect to different mixes of dependence structures (Kraljic, 1983). Furthermore, the findings can also apply to other industries in which inter-organisational relationships are highly integrated and of large exchange volume. For example, the automotive industry, high-tech manufacturing industry (e.g. robotics and advanced equipment for space, defence, and medical purposes), and pharmaceutical industry (e.g. R&D in new drug discoveries and manufacturing) are characterised by high instrumental and structural commitment (Gray et al., 2015; Thomke and Kuemmerle, 2002). As a result, the industry characteristics (i.e. high exit barrier) motivate the collaborative partners to repair the relationship instead of choosing to quit arbitrarily. In addition to that, future research should empirically investigate the dynamics of competence and goodwill trust in trust violation and repair across different industries and countries. In particular, it would be a fruitful avenue to capture the effect of cultural distance between the buyer and the supplier, because this will most likely add extra uncertainty to the dyad in trust violation and repair.

Last, prior studies have only investigated either the trust violation (e.g. Janowicz-Panjaitan and Krishnan, 2009; Wang and Huff, 2007; Weber, 2017) or trust repair stages (e.g. Wang et al., 2014; Yu et al., 2017), which lead to a gap with respect to single phase focus. Despite the fact that this thesis attempts to bridge trust violation and repair stages by incorporating the notion of deadlock and positive turning point, this thesis does not examine the effect of factors and responses presented in the trust violation stage on the following competence and goodwill trust repair due to data complexity. Future research should reveal the interrelationships of buyer-supplier actions, reactions, and situational factors between trust violation and repair stages.

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APPENDICES

Appendix I. Reflexive notes from the pilot study

From the pilot interviews, the industry experts tended to treat '*inter-organisational trust*' and '*business relationship*' interchangeably. Specifically, both words largely represented goodwill trust as they seemed to equate '*inter-organisational trust*' with '*interpersonal relationships*' possessed by corporate and executive staff between collaborating firms. The majority of industry experts expressed that goodwill trust between corporate level staff is what really matters in shaping organisational decisions while goodwill trust between operating staff tends to wear out easily and could not translate into collective actions. On the other hand, the industry experts tended to use '*reliability*' to denote competence trust and stated that competence trust is relatively easy to identify because electronics companies have their own metrics to assess their partners' competence periodically involving quality, price, delivery, and service in general. Notably, they can deliberately distinguish competence trust and goodwill trust if specific wordings are used. Thus, the wordings from the interview guide were modified to accurately reflect the industrial knowledge.

In terms of trust violation, the industry experts revealed that the notion of inter-organisational trust is a relatively stable construct, which tends not to fluctuate frequently, especially for goodwill trust. Though trust violation is generally associated with a conflict or disruption (e.g. Lumineau et al., 2015; Wang et al., 2014), the respondents elaborated that: dealing with conflicts and disruptions over quality and pricing is regarded as their regular tasks and industrial norms to them due to high uncertainty associated with ever-changing supply and demand as well as technical sophistication. Most of those disruptions do not directly affect their trust perceptions. That is to say, according to the industry experts, transgressions that cause trust violation are normally associated with increased severity and rarity across the lifetime of overall inter-organisational relationships. That is, a transgression is not only accompanied by a breach of contract, but it is also likely to negatively affect the future purchasing decisions. Furthermore, the industry experts were able to distinguish regular supply chain disruptions and trust violations. Sometimes, a trust violation is a product of the accumulation of a series of supply chain disruptions.

It should be noted that those industry experts were reluctant to use the words conflict, violation, and disruption because these words intrinsically signal negative meanings, which tend to shift from problem-solving focus to responsibility shirking. Therefore, they intentionally called a transgression as a 'major issue', which denotes a more objective connotation.

In terms of trust repair, the industry experts commented that the positive turning point relatively easy to identify compared to the point where the repair process is complete. With respect to the stage trust repair is deemed complete, the pilot interview showed that there are different ways to characterise the post-repair stage, which refer to behavioural manifestation and/or written auditing reports. The former describes that the completion of trust repair process is normally accompanied by exchange adjustments such as the restoration or increase of purchasing volume. It signals that the reliability of the trusted firm has been recovered and the intentions have been clarified. On the other hand, the revised trust perceptions in the post-repair stage, competence trust in particular, is very likely to be documented on periodic reports, which are evident and self-explanatory. Thus, the pilot interviews further refined the interview guide in terms of measurement criteria of trust dimensions across stages.

The pilot interviews also indicated that the topic of this research is extremely sensitive, especially in this industry. Since transgressions are closely associated with serious quality-related problems and likely to be reported on the news, firms generally do not want to disclose trust violations experienced or caused in the past in order to protect themselves and their business partners. Many industry experts were concerned that such negative information would harm their reputation and damage their technical credibility. A few respondents even noted that the leakage of certain information could affect the stock price of related parties, both domestic and international. In particular, the pilot interview showed that suppliers are more reluctant to share their roles and responsibilities in the process of trust violation and repair. On the contrary, buying firms are more willing to share the related information as they are symbolised as '*victims*' of violating acts. Furthermore, these experts conformed the literature that some of severe disruptions (essentially transgressions) involve mediating firms such as external technical analytics or authorised distributors to facilitate the problem identification and resolution and provide relational buffers and guarantees.

Appendix II. A request for an interview

Research summary



I am a doctoral researcher with the University of Bath¹ (UK) Information, Decision, and Operations division. My research topic centres on relationship (especially inter-organisational trust) recovery between supply chain partners within the Taiwanese electronics industry. This research adopts in-depth interviews that aim to explore the causal flows of actions and effects as well as the overall perceptual journey in the event of relationship violation and recovery.

The key points of the interview include:

Please describe a **critical issue/disruption** occurred on a **key component** between your company and your buyer/supplier that caused inter-firm trust between a dyad to **deteriorate significantly**.

- What were the attributes of the issue?
- What were the impact of the issue?

Please describe how this issue/disruption was resolved and how this damaged relationship was recovered

- What did you and your partner do to recover the relationship?
- How did these recovery responses affect the relationship?

Key informants:

CEO, VPs, AVPs, purchasing/sales managers, key account managers, personnel from engineer and R&D departments involved in the recovery process.

¹ University of Bath is ranked top 10 overall in the UK. Its business school is ranked top 3 after Cambridge University and Oxford University (Times UK, 2015)

The interview is expected to take around an hour. The content of the interview will only be used for academic purposes. The names of your company, respondents, and involved companies will be anonymised to ensure full confidentiality. The interview aims to explore the temporal events, perceptions, interaction, and responses over the violation and recovery your company has experienced. Your valuable opinions would enrich my understanding of the field. I sincerely hope that you could approve my interview with the members of your company. Interview time would be of your convenience.

Hung-Jui (Henry) Wu

Doctoral researcher

Information, Decision, and Operations (IDO)

School of Management, University of Bath,

Email: hjw40@bath.ac.uk; Tel. [REDACTED]

Appendix III. Interview agreement

After reading the following clauses, the respondent _____ agrees to provide the full content of the interview with the researcher, Hung-Jui Wu, for his research.

1. The interviewee is willing to provide sincere and honest experience voluntarily, but has the right to decide the depth.
2. The interviewee has the right to raise questions and doubts about the research and can withdraw the participation of the research at any time.
3. The interview data will be stored in the researcher's personal offline hard-drive with care. It will not be shared with any cloud storage privately or publicly.
4. In the process of data analysis, information regarding the names of key people and organisations involved will be kept anonymous by replacing them with random aliases.
5. The interview data will only be viewed by the researcher's supervisors, Professor Brian Squire and Professor Jens Roehrich for academic discussion purposes.
6. The interviewee approves that the processed interview data will serve as a part of the interviewer's thesis as well as publication.

Signature of the interviewee: _____

Date: _____

Signature of the interviewer: Hung-Jui Wu

Date: _____

Appendix IV. Interview protocol

Thank you for agreeing to take part in my doctoral research at the University of Bath, School of Management, regarding trust repair between supply chain partners. The following interview questions represent an interview guide to steer the data collection period of the research and to ensure consistency and validity across the investigated cases. The position and name of the interviewee will be recorded, but confidentiality should be respected at all times.

Organisation:

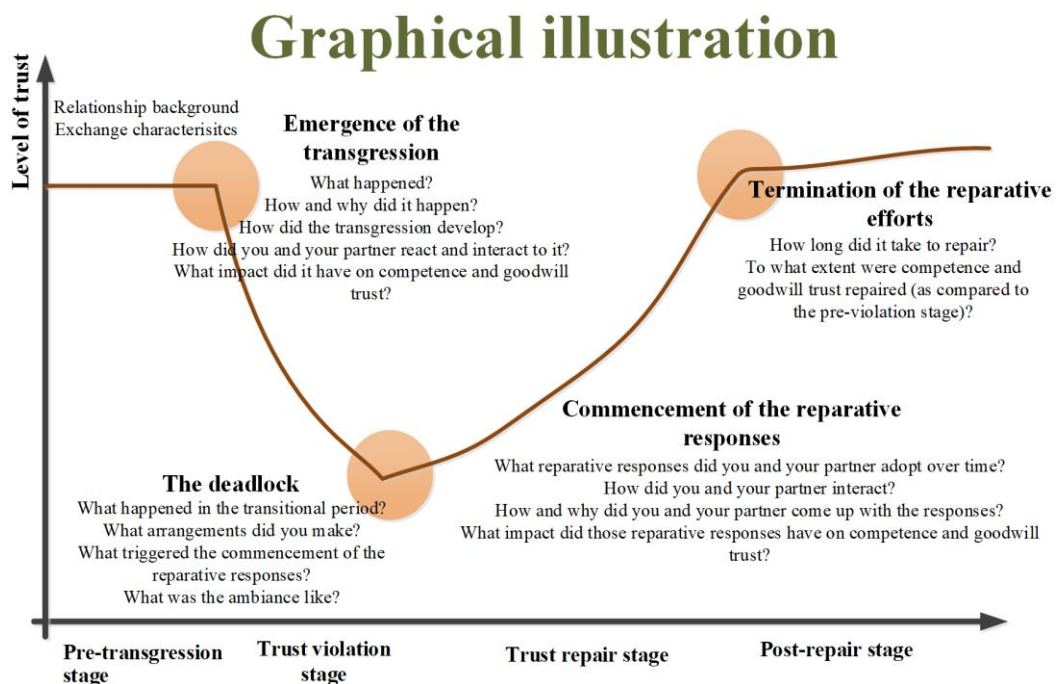
Position:

Contact details (tel. /email):

Date/time:

Graphical illustration

You will be asked to follow the graphical illustration below to complete a full story of trust repair process across different stages and at the three turning points. In addition, you are required to draw specific patterns with respect to the dynamics of trust (capability-wise and relationship-wise) that best address the experience of this particular trust repair cycle. You will be asked to provide justifications accordingly.



Appendix V. Interview guide

Opening (Briefly describe my research area)

Section 1. Respondent and industry background

General introduction

1. What is your post and job description?
 - How long have you worked in the company?
 - What is your role in a typical buyer-supplier disruption?
2. Brief background of the company and industry
 - Location
 - Size
 - General business
3. As a manager who focuses on developing and managing buyer-supplier relationships, what is the most important quality of a business relationship with your firm?
 - What do you think the impact of trust on buyer-supplier relationships?
 - Why is trust important?
 - What does a trusting relationship mean to you?

Section 2. Pre-transgression stage

Description of the trusting relationship before a violation

1. How long had you collaborated with the company?
 - Describe the overall relationship prior to the violation (probe: previous violations and disruptions, the general dynamics of the relationship in the past; prior ties)
2. What was the relationship dependence structure?
 - Relationship investment (probe: monetary investment and instrumental investment)
 - Quality and quantity of alternatives available back then (probe: key upstream and downstream market players)
 - Structural commitment (probe: the switching cost; other barriers to exit this relationship)
3. What was the trust like back then?
 - Competence trust

- Goodwill trust
 - Probe other trust dimensions that might be relevant
4. What was the exchange like back then (probe: products, volume, frequency of delivery)
 5. What was the contract like that governed the relationship?
 - Contract nature (probe: transactional and procedural elements; enforcement; duration; specificity; contingency; and monitoring)
 - How a typical project began (probe: RFQs; durations; assessment)
 6. How was the external environment that affected the relationship?

Section 3. Trust violation stage

Description of the characteristics of the violation

1. Please describe the first severe trust violation your firm experienced that has been repaired?
 - What was the violation? (probe: violation type)
 - What was the origin of the violation? (probe: hierarchical structure)
2. How and when was the violation discovered
 - I knew my partner violated the contract because...
 - While the violation was occurring, what decisions were made; how were they made?
 - How did you assess the violation?
3. How was the violation attributed?
 - Locus (external or internal)
 - Stability (whether or not the violation would repeat)
 - Controllability (whether or not the violation can be prevented)
4. What were losses incurred by the violation?
 - The magnitude
5. What were immediate reactions of your firm/you?
 - Cognitively (changing in expectation)
 - Affective (anger/ betrayal/ frustration)
 - Exchange and behaviour (planned to lower the next order)
6. How did the violation develop and evolve? (probe: the function; the duration of the violation)

7. What was the external environment that affected the relationship?

Section 4. Trust repair stage

Description of the characteristics of the repair

1. How and when was the repair initiated? (Probe: the timing and the rationale that signalled a positive turning point)

2. What reparative responses were enacted by the buyer and the supplier?

- Distributive justice approaches
- Procedural justice approaches
- Interpersonal justice approaches
- Informational justice approaches

3. How were those reparative responses derived? (Probe: what factors might buffer or hinder particular responses)

4. What was the effect of those reparative responses individually and together on elevating the violated trust? (Probe: the effect on competence trust and goodwill trust)

5. Did this process involve any third-parties?

6. What was the external environment that affected the relationship?

7. How long did it take to repair?

Section 5. Post- repair stage

Descriptions of the trusting relationship after the repair

1. What was the relationship dependence structure?

- Relationship investment (probe: monetary investment and instrumental investment)
- Quality and quantity of alternatives available back then (probe: key upstream and downstream market players)

- Structural commitment (probe: the switching cost; other barriers to exit this relationship)

2. What was the trust like after the repair compared to the pre-transgression stage?

- Competence trust
- Goodwill trust
- Probe other trust dimensions that might be relevant

3. What was the exchange like after the repair?

4. What was the external environment that affected the relationship?

Final remarks

Is there anything else you would like to add or clarify?

Could you please point out any additional information that would support my research?
(Prompt: e.g. company documents; industry report).

Please advise if other organisations and/or individuals involved in the process of trust repair will be able to provide additional insights to the interview questions.

Appendix VI. Supporting interviews (unilateral perspective)

Intervi ewee	Post; year of experience	Interviewee's company and its profile	Counterpart	Minute	The product involved in the violation
1	Product manager; 5	EPISTAR corporation (buyer) The company is the largest LED manufacturer globally that manufactures LED lighting, LED backlighting, and LED display products for a mobile phone screen, laptop, television, automotive, and other applications. Capital: \$ 380 million Employee: 4000	A.L.M.T. Corporation (manufacturer) via an exclusive distributor, Kingtech Corporation. ALMT Corp belongs to Sumitomo industries, the largest semiconductor machines and supplies provider. <i>Capital: \$24 million</i> Employee: 1360 2) King Tech Corporation (distributor) The distributor provides supplies for LED back end of the line including wafer grinding tools, IC reclaim, laser cutting machine and UV glue. Employee: 50	60	Grinding Wheel, diamond cutters, and chemical solutions
2	Associated vice president (head of the marketing department); 20	Gigabyte Technology (Buyer) The company is an international manufacturer and distributor of computer hardware products. Their products include motherboards, display cards, laptops, tablet PCs and devices, smartphones, and peripherals. Capital: \$291 million Employee: 8000	Synnex Technology International Corporation (buyer) The largest electronic distributor in Asia (top 3 globally) that supplies information, communication, consumer electronics, electronic components. Services focus on supply chain integration (marketing, distribution, maintenance, and CTO) Capital: \$320 million Employee: 5000	80	Motherboard
3	Strategic procurement manager; 12	ASUSTek Computer (buyer) The company is a Taiwanese multinational computer hardware and electronics provider. Its products include desktops, laptops, mobile phones, networking equipment, motherboards, workstations, and tablet PCs. It is ranked the world's top 5 PC manufacturer. Capital: \$250 million Employee: 17000	Pegatron Corporation (supplier) The company is a Taiwanese electronics manufacturer that develops mainly computing, communications and consumer electronics to branded vendors, but also engages development, design, and manufacturing of computer peripherals and components. Capital: \$1 billion Employee: 177000	30	Thermal module
4	Senior procurement manager; 19	HEC Corporation (buyer) The company principally focuses on the research, development and manufacturing of smart handheld devices. The Company provides touch phones, personal digital assistant (PDA) phones, smartphones, Android smartphones, and panel computers. Capital: \$280 million Employee: 16000	Qualcomm (supplier) The company focuses on providing third-generation (3G), fourth-generation (4G) and next-generation wireless technologies. Annual profit: \$24 billion Employee: 26000	90	IC (for CPU)
5	Project manager; 7			40	
6	General manager; 23	EST Technology Integration Corp (distributor) EST specialises in distributing power application and keyboard/mouse IC. Capital: \$30 million Employee: 120	Foxlink Group (buyer) Manufactures and sells connectors, cable assemblies, power management devices, battery packs on an OEM/ODM basis to some of the world's leading makers of communications devices, computers and consumer electronics. 2017 Revenue: \$3.2 billion Employee: 56000	70	IC (for keyboard and mouse)
7	Project manager; 5			50	
8	Field application engineer; 6			55	
9	Senior sales manager; 21			60	
10	Associated vice president; 15	Chang Wah Electromaterials Inc. (CWE) (supplier) This is a distributor of packaging materials and equipment from many prominent international firms such as Taiwan Sumitomo Bakelite, Sumitomo Metal Mining, Asia Pacific. Capital: \$25 million Employee: 2000	Siliconware Precision Industries Co., Ltd (SPIL) (buyer) The company provides semiconductor packaging and testing services including advanced packages, substrate packages and lead-frame packages, as well as testing for logic and mixed signal devices. Capital: \$1.1 billion Employee: 23000	60	Lead frame
11	Head of R&D department; 20	Siliconware Precision Industries Co., Ltd (SPIL) (buyer) The company provides semiconductor packaging and testing services including advanced packages, substrate packages and lead-frame packages, as well as testing for logic and mixed signal devices. Capital: \$1.1 billion Employee: 23000	Chang Wah Electromaterials Inc. (CWE) (supplier) This is a distributor of packaging materials and equipment from many prominent international firms such as Taiwan Sumitomo Bakelite, Sumitomo Metal Mining, Asia Pacific. Capital: \$25 million Employee: 3550	60	
12	Senior procurement manager; 12	Advanced Semiconductor Engineering Inc. (ASE Group) (buyer) ASE is the world's largest provider of semiconductor assembly and testing. It develops and offers complete turnkey solutions covering IC packaging, design and production of interconnect materials, front-end engineering test, wafer probing and final test. Capital: \$3.7 billion Employee: 25000	Yaga electronic (supplier) The company is an ISO 9001 and IECQ QC080000 certified, which specialises in IC assembly material provision and PCB/TVB manufacturing. Capital: \$1 million Employee: 200	50	Recycled IC container
13	Associated vice president; 25	ASEC (supplier) The company is a Taiwan-based distributor that provides semiconductor components for information, telecommunications and consumer electronics industries. Capital: \$5 million Employee: 120	Gigabyte Technology (Buyer) The company is an international manufacturer and distributor of computer hardware products. Their products include motherboards, display cards, laptops, tablet PCs and devices, smartphones, and peripherals. Capital: \$291 million Employee: 8000 Acer, Inc. (Buyer)	80	IC (for motherboard)

			is a Taiwanese multinational hardware and electronics provider. Their products include desktop PCs, laptops, tablets, smartphones, and peripherals. 2017 Revenue: \$7.7 billion Employee: 8000		
14	Sales engineer; 7	ITE Tech (supplier) The company principally engages the research, development, manufacture and distribution of integrated circuits (ICs). Capital: \$50 million Employee: 450	ATEN (buyer) The company is a Taiwan-based company principally engaged in the research, development, manufacture and distribution of keyboard-video-mouse (KVM) switches and related products. Capital: \$400 million Employee: 1700	30	IC
15	PM; 9	Foxconn Technology Group (buyer) The company principally engages in the manufacture, research, development and distribution of computer, communication and consumer electronics (3C) products. The Company provides metal casings and structures, the heat sink of desktops, servers, notebook computers, tablet computers and other 3C products. Capital: \$5.3 billion Employee: 800000	Winbond Electronics Corporation (supplier) is principally engaged in the research, development, design, manufacture and sale of integrated circuits (ICs) and memory products. The Company primarily provides logic ICs, dynamic random-access memory (DRAM) products Capital: \$1.1 billion Employee: 2500	70	Flash RAM
16	Director of the production department; 17	ChipMOS Technologies Inc. (buyer) The company is a leading independent provider of total semiconductor testing and packaging solutions to fabless companies, integrated device manufacturers (IDM) and foundries. Capital: \$300 million Employee: 6000	Wah Lee Industrial Group (distributor) The company is a Taiwan-based company primarily engaged in the development and provision of industrial materials. Capital: \$100 million Employee: 520	20	Lead frame
17	Senior sales manager; 15	Wah Lee Industrial Group (distributor) The company is a Taiwan-based company primarily engaged in the development and provision of industrial materials. Capital: \$100 million Employee: 520	An electronic device manufacturer (buyer) (preferred not to reveal)	50	Chemical solution
18	Purchasing manager; 7	Lanner Electronics Inc. (buyer) is a Taiwan-based manufacturer and distributor of network computing products and advanced computers (ACs). Capital: \$135 million Employee: 680	Super Circle (supplier) The company is a Taiwan-based manufacturer specialised in different metal sheet components and grinding supplies. The firm also provides computer peripherals and networking server. Employee: 40	60	Metal sheet for server
19	Project manager, 8	Alpha Network Inc. (buyer) The company is a Taiwan-based company principally engaged in the manufacture and sales of telecommunication-controlled radio frequency equipment, as well as wireless communication machinery and equipment. 2017 Revenue: \$560 million Employee: 6300	A US supplier through a Taiwanese distributor (supplier) (preferred not to reveal)	30	IC
20	Product manager; 6	ASUSTek Computer (buyer) The company is a Taiwanese multinational computer hardware and electronics provider. Its products include desktops, laptops, mobile phones, networking equipment, motherboards, workstations, and tablet PCs. It is ranked the world's top 5 PC manufacturer. Capital: \$250 million Employee: 17000	Intel Corporation (supplier) The company is an American multinational corporation and technology company. Intel supplies processors for computer system manufacturers such as Dell, Asus, and Apple. 2017 Revenue: \$62 billion Employee: 100000	50	IC (CPU)

Appendix VII. An overview of the pre-determined coding scheme

Category	Code	Sub-code	Description
<i>Inter-organisational trust</i>	Competence trust	Capability	“ <i>The expectation of technically competent role performance</i> ” (Das and Teng, 2001: p. 256). It denotes a partner organisation’s “ <i>ability to perform according to agreements</i> ” (Nooteboom, 1996: p. 990)
		Quality	
		Service	
	Goodwill trust	Concern for interests Interpersonal trust between corporate staff	“ <i>The expectation that some others in our social relationships have moral obligations and responsibility to demonstrate a special concern for other’s interests above their own</i> ” (Das and Teng, 2001: p. 256). It denotes a partner organisation's intentions to perform according to agreements (Nooteboom, 1996).
<i>Relationship characteristics</i>	Exchange characteristics		It involves product categories, delivery standards, volume, and other exchange-related details.
	Contract characteristics		It involves the nature of the contract (e.g. format, length, contingencies)
	Relationship duration		The length of the relationship established prior to the violation.
	Relationship stage	Exploration	Stages (awareness, exploration, expansion, commitment, dissolution) with respect to different natures of a relational exchange over the development of buyer-supplier relationships (Dwyer et al., 1987)
		Expansion	
		Commitment	
<i>Relationship dependence</i>	Relationship investment	Instrumental investment	The trustor’s investment in the relationship involves 1) instrumental and/or 2) emotional (cf. McAllister, 1997). “ <i>Instrumental investments such as time and money are expected to produce economic benefits. Emotional investments such as fostering close affective bonds are expected to produce benefits such as feelings of security, approval, and affirmation</i> ” (Tomlinson, 2011: p. 145).
		Emotional investment	
	Quality/ quantity of alternatives		A trustor who needs the benefits of trust (i.e. confident positive expectations that will indeed be fulfilled) might be able to achieve these benefits from a broad base of able and willing trustees. Thus, a trustor forms a perceived comparison level for alternatives, which refers to “ <i>the quality of the best of the member’s available alternatives ... (or) the reward-cost positions experienced or believed to exist in the most satisfactory of the other available relationships</i> ” (Thibaut and Kelley, 1959: p. 22).
	Structural commitment	Switching cost	Sometimes a trustor “ <i>may feel compelled to continue the relationship due to certain external constraints</i> ” (cf. Tomlinson, 2011: p. 145). Exiting a relationship may involve certain barriers including switching costs and/or institutional mechanisms that inhibit relationship termination (Lewicki and Bunker, 1996).
		Institutional arrangements	
	Shadow of the past		Since trust is built incrementally over time through prior interaction and experiences (Gulati 1995), prior history creates a shadow of the past to trust. It is argued that the shadow of the past provides little economic motivation to trust. On the contrary, the major motivation is to promote shared identities in interfirm relationships and thus fulfil basic human needs such as social belongingness (cf. Poppo et al., 2008).
	Shadow of the future		Shadow of the future indicates the expectations of future interaction, thereby lead to cooperative assurances. Such assurances are developed through reciprocal acts and are dependent on a significantly long time horizon of future exchange (Poppo et al., 2008)
<i>The characteristics of trust violation</i>	Locus		Whether the cause of the violation is attributed internally or externally (Heider, 1958)
	Controllability		Whether the cause of the violation can be prevented by the inflicted party (Weiner, 1985)
	Stability		Whether the cause of the violation is likely to repeat (Weiner, 1985)
	Hierarchy	Operating level staff	Whether the violation is caused by the corporate or operating staff (Janowicz-Panjaitan and Krishnan, 2009)
		Corporate level staff	
	Severity		The consequence of the violation (e.g. financial and reputational damage) (Tomlinson and Mayer, 2009)
	Type		Whether the violation is caused by the partner’s inability to do so (competence violation) or the partner’s unwillingness to do so (integrity violation) (Janowicz-Panjaitan and Krishnan, 2009)
	Duration		Time taken as the violation unfolds
	Function		The pattern of how the violation unfolds. “ <i>Departures depict the break or deviation from the prior flow of activities, but they do not account for the impact or consequence of these actions</i> ” (Putnam and Fuller 2014: p. 190)
	External environment		“ <i>as a source of opportunity and threat which is evaluated in terms of gross movements or tends</i> ” (e.g. economic, social, and political influence) (cf. Bourgeois, 1980: p. 32)
<i>The characteristics of trust repair</i>	Distributive justice approaches	Compensation provision	Distributive justice refers to benefits received are proportional to investment. Organisations “ <i>will always receive economic rewards commensurate with their input into the relationship</i> ” (cf. Liu et al., 2012: p. 358). It manifests in 1) compensation provision and 2) resource investment (Wang et al., 2014)
		Resource investment	
	Procedural justice approaches	Modifications of SOPs and contracts	Procedural justice indicates that decision-making of an organisation is “ <i>unbiased, representative, transparent, correctable, and ethical as well as consistent with contractual codifications</i> ” (Luo, 2008: p. 28). It manifests in 1) modifications of standard operational
		Joint decision making	

		Real-time and appropriate recovery procedures	procedures and governance structures; 2) joint decision making (e.g. involvement of affected partners, the concern of mutual interest and welfare); 3) a near real-time and appropriate execution of recovery procedures (Wang et al., 2014)
	Interpersonal justice approaches		Interpersonal justice refers to interpersonal treatment received in communicating the allocation of resources. It is assessed based on violators' sensitivity, dignity, politeness and respect in enacting reparative responses (Liu et al., 2013). It manifests in the demonstration of respect, concern, and willingness to help (e.g. providing frequent help and regular visit) (Liu et al., 2012)
	Informational justice approaches	Tailored communication	Buyers and suppliers “ <i>communicate candidly, explain procedures thoroughly and reasonably, communicate details in a timely manner, and tailor communications to each other's specific needs</i> ” (cf. Liu et al., 2013: p. 359). It manifests in 1) tailored communication, 2) thorough and reasonable explanations of procedures, 3) timely, detailed, and accurate communication (Liu et al., 2012)
		Thorough and reasonable explanations of procedures	
		Timely and accurate communication	
	Function		The pattern of how the recovery unfolds. “ <i>Departures depict the break or deviation from the prior flow of activities, but they do not account for the impact or consequence of these actions</i> ” (Putnam and Fuller 2014: p. 190)
	Duration		Time taken as the recovery unfolds
	External environment		“ <i>as a source of opportunity and threat which is evaluated in terms of gross movements or tends</i> ” (e.g. economic, social, and political influence) (cf. Bourgeois, 1980: p. 32)
Trust repair stage	Pre-transgression stage		Trust reaches an equilibrium over repeated exchanges without any severe violations (Dirks et al., 2009)
	Trust violation stage		Trust declines after the occurrence of the violation (Dirks et al., 2009)
	Trust repair stage		Trust bounces back after reparative efforts signalled by one or both parties (Dirks et al., 2009)
	Post-repair stage		Trust reaches a new equilibrium (Dirks et al., 2009)
	The involvement of the third party		Whether a third-party mediation is involved (Woolthuis et al., 2014).

Appendix VIII. Nvivo snapshots

FILEHOMECREATEDATAANALYZEQUERYEXPLORELAYOUTVIEW

GoRefreshOpenPropertiesEditPasteMergeCutCopy

WorkspaceItemClipboardFormatPara

Nodes

Look forSearch InNodes

NodesCasesRelationshipsNode Matrices

Nodes

Emergent themes

- Competition to cooperation to fulfil end client's needs
- Discrepancy between executive and operational staff
- Escalation to senior management
- Focus diversion
- interpersonal relationship between boundary spanners
- Leveraging the current relationship to other relationships
- Lifecycle of business operation & cooperation
- Organisational value
- Preventing reputational and financial damage

General background

- Company info and facts
- Contract
- Industry characteristics
- Job description
- Length of relationship
- Product

Reflection on repair experience

Relationship

- Bargaining power
- Dependence structure
- Economical concern
- Level of expectation
- Level of trust
 - Competence trust
 - Goodwill trust

Order status

Prior trust

Strategic concern

Supplier evaluation

Utilisation of power

Reparative responses

Sources

Nodes

Classifications

Collections

Queries

Reports

Maps

Folders

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Nodes

Competence trust

Goodwill trust

Order status

Prior trust

Strategic concern

Supplier evaluation

Utilisation of power

Reparative responses

- Legal resolution

Organisational justice approach (buyer)

Organisational justice approach (supplier)

- Distributive justice approaches
- Informational justice approaches
- Interpersonal justice approaches
- Procedural justice approaches

Perception (buyer)

Perception (supplier)

Standard operating procedures

Searching for alternatives

The shadow of the future

The shadow of the past

Third party influence

Time

- Time taken to repair
- Time taken to violation

transgression characteristics

- Locus

Magnitude

Stability

Timing

trust repair stages

- T0 pre-transgression
- T1 trust violation in action
- T2 trust repair in action
- T3 post-repair equilibrium

Sources

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